

UNIVERSITY NEWS 15- 1977

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and reviews are individual and do
not necessarily reflect the policies
of the Association.*

Editor : ANJNI KUMAR

Role of Agricultural Universities in Integrated Rural Development

S. P. Pande

Integrated rural development is the focal theme of all the programmes of the year 1976. In fact, this was the theme of the Indian Science Congress held at Waltair in January, 1976, and while presenting the budget, the Union Finance Minister has made provision of Rs. 15 crores for working out suitable strategies for integrated rural development. His scheme envisages a Resource Inventory of the districts and specific action plans for area development thereafter. In elaborating this the Finance Minister observed as follows :

“Surveys of a global nature and on a grand scale carried out through up-to-date gadgetry are, no doubt, highly impressive. But the results need to be broken up for compact areas and supplemented by local investigation. This is true of soil surveys, ground water surveys and meteorological studies, to name but three areas of direct relevance to rural development. What is critical is not mere disaggregation of survey data, but their evaluation in the local context for generating concrete projects for improved resource use. We have been particularly deficient in the past in this aspect of purposive collation and utilisation of survey data, integrated and oriented towards concrete action at the local level.”

Integrated rural development will have to go far beyond agricultural development, reaching into the overall socio-political and the economic system of the country. “Rural development” means “rural transformation—change not only of the methods of production and of economic institutions but of social and political infrastructures as well, and transformation of human relationships and opportunities”. As Shri Subramaniam put it : “What we must aim at is not just some improvement in the yield per unit of land of a few crops or the propping up of the poor through make-believe programmes of employment. What is called for is something more comprehensive and fundamental—a systematic, scientific and integrated use of all our national resources, and as part of this process, enabling every person to engage himself in a productive and socially useful occupation, and earn an income that would meet at least the basic minimum needs. Advances in science and technology now make such an objective viable. The question is how do we go about this task and organise ourselves in the Government and elsewhere for reaching this goal”. This rural transformation includes a change in the attitudes of people towards life, work and growth. The spirit of dependence and resignation has to give way to self-reliance, initiative, hope, enthusiasm and resourcefulness and a sense of community. Integrated rural development would also involve changes in the traditional power structures. (Contd. on page 47)

UPSC and the Universities

Sarup Singh*

Plato talked about 'the ancient quarrel' between poetry and philosophy but he seems to have given rise to another quarrel—that between men of action and men of intellect. His own 'philosopher-king' was, of course, at once a man of intellect and a man of action but that remained in the realm of speculation even in his own times. It is an ironical comment on Plato's whole philosophy of politics that he himself had to seek refuge from politics into the Academy. And the most painful part of his experience was that the only person who came nearest to his ideal, Socrates, met a cruel death at the hands of his contemporaries. In ancient India, as we all know, society was quite rigidly divided between those who were entrusted with the task of acquiring and disseminating knowledge and the others who looked after the mundane affairs of society.

The real distinction of the twentieth century world is that now it is the man of intellect who is the real man of action. There are still some Hamlets, of course, who find comfort in the thought that it is only philistines who succeed and that there is a special merit in not being men of action. But by and large the world is run by those who have knowledge and who know how to apply it. Pandit Nehru recognised this ethos of the twentieth century and he admirably described the qualities that he expected modern administrators to possess. While addressing the Institute of Public Administration in 1958, he said: "In a period of dynamic growth, we want as civil servants persons with *minds*, with *vision* and with a *desire to achieve*. We want persons who have *initiative* for doing a job and who can *think hard* to do it" He also said that "in the modern age the success of the public servant depends, in addition to ability, efficiency and integrity, upon his capacity to cooperate with the public" and that public servants should be trained in such a way as to prevent "their developing an ivory-tower attitude to their careers."

It is clear that the kind of civil servant that Pandit Nehru had in mind can be produced only by universities which, in Pandit Nehru's own words, stand 'for humanism, for tolerance, for progress, for the adventure of ideas and for search of truth'. As centres of higher learning universities exist for the cultivation of excellence and the pursuit of knowledge as also for providing opportunities to individuals to get socialized in an atmosphere of equality and free discussion. In a society like ours which is fragmented by caste, religion, language and region—not to mention the vast economic barriers which divide one class of people from another—universities, as training grounds for youth, can provide a *natural* environment for the growth of a healthy,

integrated and confident outlook on life. Indeed they alone can help individuals from all walks of life to shed their fears and prejudices and develop a modern approach to various social and other problems. Without straining the point, a university may be described as a genuinely liberated, classless society.

I have painted a somewhat idealistic picture of a university and I have done so because I believe that even when universities do not measure upto the ideal prescribed above, they do play the role of a powerful socialising agency. Perhaps the most positive feature of the student movement throughout the world in recent years has been its tendency to bring all students on the same platform as friends and comrades. Even the worst excesses of this movement have left behind exhilarating experiences for the young who shared their joys and sufferings though otherwise they belonged to different social worlds. And in countries where students were able to forge links with the poor and the under-privileged, they emerged out of the fire as responsible adults.

It is obvious that the relationship between the universities and a body like the UPSC which is entrusted with the task of selecting persons for manning the different services in the country must be very intimate. The UPSC cannot select better men than what the universities produce. If universities are genuine centres of learning and culture and if they produce men with a strong moral and social commitment and faith in the future of the country, then, to quote Pandit Nehru's words again, "it is well with the nation and the people". In spite of the almost chronic disappointment of people in authority with our present educational system, the fact is that at least some universities in the country have achieved excellence in various disciplines and they do produce men and women of whom any country would be proud. Not all of them, it is true, become civil servants—which is as well, for the country needs, equally urgently talent in other areas of national life. But some of the best products of the universities do become civil servants and it is gratifying to record that they do fulfil, to a large extent, Pandit Nehru's expectations. They not only possess ability and integrity of a high order but also vision of a great future for the country.

It must, of course, be added that the growth and development of our universities have been rather uneven and not all universities have done equally well. This fact was brought to the notice of the Golden Jubilee Session of the Association of Indian Universities by Prof. A.R. Kidwai, Chairman of the UPSC when he told the assembled Vice-Chancellors that the UPSC had been taking particular care to analyse the deficiencies in the performance of the

* Member, Union Public Service Commission

candidates at the examinations conducted by it and that the reviews containing comments of examiners in respect of important competitive examinations were circulated for the information of the various educational authorities in the country e.g. the Universities, Ministry of Education, University Grants Commission, Association of Indian Universities, Directors of Education in the States, Boards of Education etc. to enable them to consider measures for remedying such deficiencies in the educational equipment of the candidates as the reviews might reveal.

Most candidates who appear before the UPSC fall under two categories. A small number of them, comparatively speaking, have received professional education, like engineering, medicine, architecture, etc. Though the number of these candidates who appear for the interview is not very large, the number of vacancies filled by the UPSC in these areas is quite substantial. It is in respect of the other candidates however that the interaction between the universities and the UPSC is both extensive and intensive. Over 30,000 candidates applied this year for the IAS etc. Examination and the number is likely to increase in the coming years. The kind of examination that they are required to take cannot in the nature of things be particularly different from what the students have learnt at the university stage. For the last quarter century or so, the syllabi in most university disciplines did not reflect the advances in knowledge that were taking place. Only a few of the universities had modernised the syllabi but a large number of them had not; nor had the UPSC for that matter.

All this has changed in recent years. The UPSC has made extraordinary efforts to improve the syllabi in most university disciplines. This in turn is being reflected in the attempts now under way in a number of universities to modernise and update their syllabi. There is, of course, a problem there. Universities are at different levels of development. If the UPSC follows the syllabi recently introduced in some of the more innovative universities, candidates from other universities may suffer. At the same time the UPSC cannot and should not do anything which by its example may even remotely lower the standards of knowledge in any discipline.

The universities have without question various functions to perform. Preparing their students to participate in the All India Competitive Examinations is only one of them and sometimes, as some academics maintain quite a minor one. At the same time it is to be recognised that since the Commission is a constitutional authority which is entrusted with the task of selecting suitable candidates for various posts under the Union Government, it has always to keep in mind the *requirements* of the posts. In the light of these requirements it is quite possible that the Commission may make certain innovations which the universities may or may not feel inclined to accept. For instance, it is possible, that at some stage the Commission may insist that all candidates appearing

for the IAS and Allied examinations be obliged to offer a compulsory paper in one of the Modern Indian Languages. This would certainly encourage the study of the Indian languages throughout the country. This may even prompt the universities to do more serious thinking about introducing Indian languages as the medium of instruction even at the postgraduate level.

At present the situation is quite confused. Very few universities have made the experiment of using Indian languages as the medium of instruction at the postgraduate level. In fact the view is widespread that replacing English by an Indian language as the medium of instruction at the postgraduate level would be disastrous. It is, of course, true that problems would arise and new challenges would have to be faced. But then some day they have to be faced and it is as well that we start preparing ourselves to face them now. For almost a quarter century we have been talking of these problems but we have not faced them. The effect of this attitude has been that some of the brightest youngmen and women in some of the metropolitan towns have developed almost an attitude of contempt towards Indian languages. Indeed English has become not only the language of knowledge but also the language of culture.

Surprisingly even the State Public Service Commissions are reluctant to adopt Indian languages as the medium of their examinations. The UPSC did offer Indian languages as an alternative medium for two papers for the IAS and Allied examinations but the response from candidates has been very poor. The general feeling seems to be that the moment a candidate opts for an Indian language he is sunk. This is an unfortunate feeling and the UPSC has done nothing to encourage it. The UPSC does its best to select candidates not on the basis of their competence in English but on the basis of the depth of their knowledge in the various subjects, their general mental calibre, intellectual capacity, social awareness and other qualities which are required of an honest and able administrator.

Once it becomes clear to candidates that they must know an Indian language well enough to qualify for absorption in the most prestigious post available with the Union Government, the climate will change dramatically. And then even the metropolitan universities may not hesitate to consider the possibility of accepting an Indian language as a medium of instruction at the postgraduate stage. That would make a significant impact on our entire educational system. Maybe the present tension between the elitist institutions and others would also disappear in consequence. It may also generate changes in our social attitudes which are badly needed. The tensions in our present-day society are at times desperate and the under-privileged have no means of discovering their sense of belonging to the country.

The situation has to be corrected. If we want to emerge as a healthy, integrated society, the lead in this respect has naturally to come from the universities.

Planning University Education

S.K. Jha

Patna University has been a teaching-cum-residential University since 1952. It started its new character with ten colleges and continues to have these colleges only. These institutions were full to their capacity even in 1952. But during the last twenty five years, in spite of the effort of the university authorities to restrict admissions to various courses, the student population has grown from five thousand to thirteen thousand. With increase in the number of students, teaching staff had to be increased. The number of teaching staff has increased from 388 to 913. The proportionate increase in the number of students is larger than the increase in the number of teachers. As a consequence student-teacher ratio has worsened. During the same period a number of specialised branches of study have developed. The result has been that the student-teacher ratio in the main stream of the university education today is much worse than it was twenty-five years ago.

The position of space is no better. The areas of these institutions have not expanded. Though a few buildings, here and there, have been constructed to provide more class rooms, yet they are utterly inadequate for the student population. Teachers do not have separate rooms and they have to waste hours per day when they are not engaged in class work.

The research students in the Arts Faculty do not get a place to sit down and read or write. Some of the open spaces are now taken up by buildings. Library accommodation, common room, canteen and play-grounds either do not exist or are utterly inadequate. In their off-hours the students have to loiter about on the roads or the verandahs, creating un-academic atmosphere. Almost the same situation exists with regard to hostels for students and quarters for teachers. The residential university provides hostel accommodation to about 20% of its students and the percentage of teachers who have university flats is much lower. This state of affairs with regard to space and other facilities exists in spite of substantial assistance from the U.G.C. for improving the situation. However, it may be pointed out in respect of buildings, the university authorities are also to blame. During the three plan periods (II plan, III plan and IV plan) the university received Rs. 12029 thousand from the UGC and Rs. 7906 thousand from the State Government for buildings. The university was able to spend only Rs. 4302 thousand out of the grant from the U.G.C. and Rs. 2720 thousand out of the grant sanctioned by the State Government. Many factors have been responsible for the poor utilisation of the building grants; but the main cause was the inefficiency of the works department of the university, which has been a big white elephant serving little useful purpose.

During the period 1952-53 to 1972-73 the expenditure of the university per student has increased in current prices. But on account of considerable rise in prices, statement in terms of current prices gives us a very wrong picture. In the absence of a cost of living index, we are presenting below comparative figures of cost per student in terms of index of wholesale prices with 1952-53 as the base.

	Cost Per Student 1952-53 (in Rs.)	(Undergraduate) 1972-73	
		Current Prices (in Rs.)	Constant Prices (in Rs.)
Science	693.03	1225.48	456.59
Medical	907.22	1762.69	801.22
Engineering	1242.43	2838.00	1057.37
Arts	770.07	727.33	270.97
	Cost Per Student	(Postgraduate)	
Arts	355.97	1050.91	391.54
Science	978.49	3110.11	1158.75

The table above shows that in the case of post-graduate science the cost per student has gone up substantially. Modern science has become rather costly. Study of Science was neglected during pre-Independence days. It is necessary that teaching and research in Scientific subjects should be developed. Looked at from this point of view, we need much larger investment in this faculty. There is marginal increase in per capita expenditure in Postgraduate Arts also. This is mainly explained by the establishment of some special branches of study, mainly in History. In other subjects the cost per student in constant prices has gone down in spite of the development of newer branches of study and much greater output of research.

In the case of undergraduate studies the expenditure per student has fallen everywhere including Medicine and Engineering. The largest decrease has occurred in the case of Arts where we have the bulk of student population. As a consequence the quality of teaching has suffered. We have sacrificed quality for catering to popular demand for greater quantity. We are turning out large number of Arts graduates every year who become useless for the society because, not being properly educated, they are not fit for performing useful social functions; and because they have acquired white-collar mentality, they are unfit for physical work. There is large scale unemployment among them. The result is that at great social cost we are producing a large number of unemployable young men.

Another important fact which is revealed by this study is that the contribution of students to the

(Contd. on next page)

1. 'Monograph on Grading for Universities'.
2. 'Towards Better Questions' (Item Writers' Cook Book) Published by Research Cell, Association of Indian Universities, New Delhi; 1976.

1. 'Monograph on Grading for Universities' gives a fairly comprehensive treatment to the subject and convincingly justifies the need to substitute grading system for the present system of marking on 101 point scale. The whole approach is marked by pragmatism; the clear lucid and catechistic style, with even a recourse to repetition when required, is not only educative but also stimulating. An interesting feature is the recommendation that "numerical marks can be the beginning of the marking procedure" and that "examiners should mark papers as they have been doing but then the final report of the results should not be in the form of numerical marks" (P7). It is then left to the universities to undertake "the scaling, and thence grading" (P7). The Dandekar method proposed certainly carries conviction, but is perhaps flawed in one respect : the range of marks over "the last three years" or more to go into the determination of average range of marks may not have essentially the background procedure of "randomisation".

The monograph has answered

almost all the "apprehensions and pertinent queries", with regard to the grading system, effectively. However, one of the significant apprehensions of marking at the cut points of grades may not appropriately be left to the automecity of the university normative conversion table. This necessarily calls for the training of the examiners in marking by grades before the implementation of the system. The monograph does hint at the need for it (P 17) but leaves it either to time (P 23) or to a tentative arrangement of "one-day workshops" (P 26). It is a matter of crucial significance and nothing should, therefore, be left to chance so far as possible. The reviewer is not making a plea for the under-estimation of the abilities of examiners, but there is no scope for over-estimation either. However, the suggestion for keeping "the identity of the student and his college" (P 7) confidential tends to under-estimate the sense of responsibility of examiners and increase the workload of the university.

2. 'Towards Better Questions' must awaken even some seasoned examiners out of their slumber and give a jolt to their sense of complacency. It contains a fully illustrative account of the principles of Item/Question writing, with a check list of criteria for prevalidation to guide those who care to learn. Of course, the illustrative examples are confir-

BOOKS

med to certain subjects only and one wishes that similar examples could be offered for humanities also. The booklet goes a long way to prove that Item/Question writing requires scientific thinking and planning and can no longer be left to the whims and fancies of the examiners. It would, perhaps, have been appropriate to have included some more contrasting illustrations of certain esoteric and ill-planned questions set in our university examinations in the past. Some illustrations of "objective items for order abilities" (P 12), specified as such, would not have been off the mark. One interesting guideline is the avoidance of high-frequency cliches in our question papers like "write all you know about", "discuss briefly", explain briefly" etc. (P 8,9). Another interesting feature is the use of the subject itself (educational testing) for purpose of illustrations. This is what makes the book very useful and handy for training courses and workshops of examiners. A must for all teachers, examiners and educational administrators ! It is high time we appreciate what is said in the Foreword : "The kind of questions which are asked in university examinations determine, to a large extent, the kind of teaching that is done in the classroom".

—S.P. Julka, Z.H. College, Delhi

(Contd. from previous page)

expenses of the university has been going down. The three main heads of students contributions are : (i) Registration; (ii) Tuition and other fees; and (iii) Examination fees. In 1952-53 the University received 28.18% of its current revenues from these sources. In 1972-73 the contribution of these sources to the current revenues of the university came down to 16.91%. This means that nearly 83% of the total revenues comes from grants of the State Government or the UGC. We have to think seriously whether this heavy subsidisation of higher education is desirable. It is not desirable to assist the weaker sections of the community more liberally than at present and to provide larger number of merit scholarships so that meritorious students get encouragement and no really meritorious student suffers on account of the poverty of the guardians? For

the first of the students the principle of substantial contribution for the benefit received should be adopted. This means that tuition fees and examination fees should be sufficiently increased so that the element of subsidy from public funds should be reduced to less than 50% in the case of students who come to the university either for luxury or for improving prospects in life.

Some of the facts revealed by this study and the issues that they throw up have been mentioned in the foregoing paragraphs. It is felt that sufficient thought has not been given to planning of higher education. Planning of manpower should be an integral part of our developmental planning. Higher education has to be planned on the basis of prospective demand for different types of human labour. Further investment in education has to be determined by the calculus of cost and benefit.

University as a Catalyst

The convocation address of Jadavpur University was delivered by Dr. B.D. Nag Chaudhuri, Vice-Chancellor of Jawaharlal Nehru University. In his address Dr. Chaudhuri said that the survival of the University in the inevitable conflicts between technology and society cannot be through hasty compromises with inept traditions but only through deeper understanding and a steadfast role to protect and propagate scientific and technological thought. The future of the University was interlinked with the future of the teachers and student community. The University could look with greater assurance than most other institutions to the new world view where technology and nature do not try to subvert each other but where man uses technology to preserve and protect nature because in doing so the man assures himself of his future.

meaningful. It was particularly true of a developing country like India where the University must emerge as a powerful instrument for social and economic transformation and as a catalyst for a change. The Chancellor said that great care should be exercised in the topics of research with a view to ensuring that by and large they were purpose-oriented and contribute directly or indirectly to the welfare of the community. It was also necessary to keep in view the need for a multi-disciplinary approach in a University which though primarily devoted to engineering science and technology also taught the social sciences and humanities. This would ensure that technological solutions did not conflict with social and economic objectives. Of a special significance is the step taken by the University to associate industries as well as other agencies

standing. Dr. Karan Singh, Union Health and Family Planning Minister, and the President of the Institute, presided over the function. Dr. Singh lauded the profound humanism of Dr. Salk and described the development of the anti-polio vaccine in 1954 as a major scientific achievement for which the entire world was grateful to him. This provided an example of the benign use of science. He said that if knowledge is not used with wisdom, it could spell disaster to the mankind. Science was neutral and its usefulness and uselessness are dependant on the wisdom of the users. He asked the scientists to turn their attention to the health care of children who would be inhabiting the globe in the coming conceptual epoch of Dr. Salk and suggested that 1977 be observed as the year of the child considering that the year 1976 was observed as the year of family planning and the 1975, the year of smallpox eradication in India.

Convocations

Dr. Nag Chaudhuri said that the complex problems of the Universities in India and particularly of a technological university like Jadavpur were intimately related to the interaction of the University with society. As such they were not likely to be resolved easily or in a short time. He pointed out that the country whose population was going to exceed 100 crore marks within the next 24-25 years was going to be a crowded place.

The Chancellor, Mr. A.L. Dias, in his address to the recipients of the degrees said that their academic attainments and labour would be fruitful only when they were able to apply their learning and research to the needs of the community. It is only through constructive involvement in the live issues of today that the learning process could be made

in selecting mutually beneficial projects.

Prof. A.N. Bose, Vice-Chancellor of the University said that paucity of adequate space has always threatened to upset the proposals of the academic development of the institution. He said that inter-disciplinary courses like space engineering and technology, bio-engineering and water resources engineering were being introduced from the next session.

AIIMS honours Dr. Salk

The All-India Institute of Medical Sciences, New Delhi conferred the honorary fellowship on Dr. Jonas Edward Salk at a special convocation. Dr. Salk also received the Jawaharlal Nehru award for international under-

Dr. Singh said that the welfare of the children provided an important index of development in any country. In India a great deal has been done in this direction. He identified nutrition and immunisation as the two major areas requiring pooling of resources on a top priority basis.

Prof. V. Ramalingaswamy, Director of the Institute, very aptly described the life of Dr. Salk as one of making errors and correcting errors. He said man was today pitted against his own species and his survival depended on his wisdom to live in cooperation and avoiding conflict.

Southern Vice-Chancellors meet in Trivandrum

A conference of the Vice-Chancellors of southern universities was held in Trivandrum recently under the Chairmanship of Prof. R.S. Krishnan, Vice-Chancellor of the University of Kerala. Besides matters of common interest, the question of medicare for university employees and the problems of affiliated colleges were considered in some detail. The conference examined the first group medical insurance scheme prepared for the university teaching and non-teaching staff in the University of Madras. It noted with interest that the United India Fire and General Insurance Company is charging a sum of Rs. 97/- per annum per employee and is providing medical benefits amounting to Rs. 2,500 per annum and Rs. 500 per disease. The Madras University has covered its staff with families

new colleges. It recommended that in view of the constrained financial resources of the State Government as well as the universities, the national policy of strengthening the existing colleges, rather than starting new colleges which are financially non-viable should be followed. Special consideration may be given to educationally backward areas. The fuller use of the existing facilities in colleges should be made use of by arranging for morning and/or evening courses in addition to the usual day programmes. Regarding private appearance at the university examinations the conference was however of the view that such private appearance should be restricted only to the bonafide teachers and candidates undergoing correspondence courses.

The conference also examined the problems faced by the affiliated colleges with regard to

in New Delhi. The team performed very well. It defeated the Poona XI by 7:0 in the first round. In the third round it had to encounter the formidable ASC XI who have been the reputed national level champions of Beighten Cup, Aga Khan and Ranjit Hockey tournaments. The first match was drawn but the team lost in the replay by a narrow margin of one goal. The performance of S/Shri Zaffar Iqbal (Aligarh), B. S. Yoyoppa (Punjab Agril) and Charanjit Kumar & Bhajan Singh of Guru Nanak Dev was appreciated.

Popular science lectures at Patna

Patna College has organised the second series of popular science lectures in the subjects of Chemistry, Statistics, Mathematics and Biology. These lectures are organised to enable the undergraduate students to have an understanding of the various science topics. They are intended to provide a common sense picture of each discipline. The compulsions of the modern age are such that an Arts student has got to know whatever precious little he can about science. The knowledge of science, acquired by him in his earlier career is rudimentary and has to be supplemented by reading his own magazines, his listening to the wireless and his watching the television. Notwithstanding to this, the spoken word has its own attraction and value.

Up to the first half of the last century apathy towards science was commonly encountered in the universities, except in respect of Mathematics, which was held in high esteem. The situation improved appreciably after the mid-sixties of the last century when general interest in science education grew rapidly. In the present century the tremendous scientific progress has taken place and younger universities have been more science minded but the old cleavage between the scientist and artist persists. Even today we have our universities as bi-polar worlds.

CAMPUS NEWS

consisting upto four persons on payment of Rs. 393/- per annum per family. In return they would receive Rs. 10,000 by way of medical benefits—hospitalisation, TB treatment and other home treatments. Most of the universities in Kerala have adopted the reimbursement benefit scheme that are available to its state employees. The conference recommended that other universities which do not have such a scheme of reimbursement of medical benefits for its employees may examine the scheme and negotiate with the United India Fire and General Insurance Company.

The conference reviewed the problems faced by the affiliated colleges with reference to the provision of adequate accommodation, library, laboratory and qualified teachers, and also the problems connected with the starting of

postgraduate education and recommended that the universities should follow strictly the University Grants Commission guidelines with regard to postgraduate education in the future. This would involve the university taking up the leadership in identifying the centre for postgraduate and affiliation being granted only when there are at least four PhDs and six MPhils in Science subjects and two PhDs and four Mphils in Social Sciences and Humanities subjects. It further recommended that the UGC Teacher Fellowship Scheme should be fully utilised.

Universities Hockey Team performs well in Jawaharlal Nehru Tournament

A combined universities hockey team participated in the Jawaharlal Nehru Hockey Tournament

They have each a world of science as well as a world of non-science. The scientist is bound to his department, the artist to his college or university. The specialisation in science which has been faster than that in Arts has resulted in a bad communication between the two realms of knowledge. Cross fertilisation remains constrained. Recently a drift has occurred towards Arts in the British universities as a reaction against the extreme specialisation in science but the fact remain that the arts man is strikingly more ignorant of science than the science man of the arts. This underlines the case for effecting a synthesis between science and arts subjects within the corpus of a wide-ranging syllabus for integrating and blending the two into one coherent, intellectual medium or one single culture so to speak. The Patna College according to his Principal has tried to meet the situation to some extent by its recent efforts of organising these popular lectures.

Punjabi Varsity to restructure its courses

The Academic Council of the Punjabi University, Patiala, has approved in principle the scheme of the University Grants Commission for restructuring of the first degree level courses in arts, science and commerce to adjust them to the developmental needs of the country. In the guidelines to the university the Commission has recommended fifteen new subjects for the undergraduate courses.

The courses suggested for B. Sc. degree are : electronics, applied physics, horticulture, fisheries, home science, applied nutrition, public health, micro biology, bio chemistry, soil science, agro chemicals including fertilizers, dairy science and plant protection.

Agriculture imparting farm management, cooperative management community development, local self government, cultural

marketing, cultural anthropology, sociology, panchayat raj, rural industrialisation, social work, labour welfare, industrial relations, trade unionism, marketing and home economics have been suggested for B.A. and B.Com courses.

The Commission has also suggested to the universities and colleges to add such other subjects which they consider to be relevant to the needs of their areas. The need for combining the academic components of courses with some sort of applied component suited to real problems and work experience situation in the different regions of the country have also been emphasised. The Commission has however cautioned that the courses offered by colleges in rural and urban areas should not be fundamentally different as the intention is not to create a group of sub-standard colleges.

The university also approved in principle a proposal to institute a diploma course in adult education to produce trained personnel for the social education wing of the Directorate of Public Instruction, Punjab and to hold some refresher-cum-orientation courses in adult education for NSS workers and also for teachers employed in non-formal education centres.

Plea for reconstruction of National History

The thirty seventh session of the Indian History Congress was held in Kojhikode. Dr. Jagdish Narayan Sarkar in his presidential address said that at first an all-out attempt should be made to carry on analytical and fundamental research and write history at the national plane and the regional or local plane on upto date lines of scientific enquiry so that accuracy and objectivity were achieved as a recognizable vision of life. He said that the writing of national history should proceed simultaneously on both the planes as the task of the reconstruction could not be adequately performed without intensive regional or historical studies in different spheres.

Alongwith analytical research on both the planes attempt should also be made to write what is called synthetic history which would present the fruits of the research in lucid manner for the benefit of the layman. This however should not be subjective or prejudice history. He said that the works of the analytical and synthetic historians could be supplemented with each other along parallel lines.

Subscription Rates

Period	Inland	Abroad	
		Surface	Air
	(Rs.)	(Rs.)	(Rs.)
1 year	16.00	80.00	140.00
2 years	30.00	150.00	260.00
3 years	44.00	220.00	360.00
5 years	72.00	350.00	550.00
Single copy	00 80 ps.	4.00	8.00

The Journal is mailed on 1st & 16th of every month.

Dr. Sarkar said that popular adaptations from the works of the first two tiers should be made so that the masses might understand the broad current of history and culture of the country. All modern media of instruction including the newspaper, radio and television should be harnessed for this purpose.

He appealed to the University Grants Commission and the Indian Council of Historical Research to extend the scope of their grants to wider sections of teachers and students.

State Boards meet in Trivandrum

The eighth conference of the Boards of Secondary Education was held in Trivandrum. The conference recommended that the new pattern of education be introduced as early as possible throughout the country. The +2 stage should form a part of the school system. It also suggested that the States prepare a time schedule for implementing these recommendations. If due to administrative reason, in some states the +2 education is imparted in colleges as a transitional measure, the academic control should cease with the universities and be transferred to the Boards.

The conference noted the objectives of ten-year school education and the subjects to be taught as stated in the NCERT publication 'curriculum for the ten-year school'. The conference also recommended that the work experience, science and mathematics should form essential elements of the curriculum for the ten year schools. The massive programme of orientation of teachers and general public should be organised by the Boards to familiarise them with the philosophy and content of the new pattern of education. The NCERT's publication on Higher Education and its vocationalisation was commended.

Screening test by UPSC

Prof. A.R. Kidwai, Chairman of the Union Public Service Commission while addressing a meeting of the Indian Institute of Public Administration in Ajmer said that the Commission would soon make an objective type of screening test for the recruitment to the All-India services. A small fee would be charged for this purpose and only those who qualify will be allowed to appear in the final examination. This step has become necessary as the number of candidates appearing at the test has increased by about 5,000. In the last examination for Central services, 30 000 candidates had appeared.

Steps to inspire public confidence in the examinations conducted by the Commission have been taken. The selection work is now completed within six weeks for all posts from the last date of receipt of the applications. It is proposed that all-India examinations of various disciplines should be completed in summer vacations so that the teaching work in the universities is not dislocated.

Prof. Kidwai stressed the need for a national employment policy correlated with the education policy.

Panel to assess farm universities

A twelve member committee under the chairmanship of Dr. M. S. Randhawa, former Vice-Chancellor of Punjab Agricultural University, has been appointed by the Government of India to assess the functioning and the role of agricultural universities in the country. Dr. B.S. Minhas, former Member of the Planning Commission would also be one of its members.

The Pantnagar and Punjab Agricultural Universities were the first agricultural universities to be set up in the country and they were patterned on the model of land grant colleges of the United States. The need for setting up

separate universities for agriculture was felt because the general universities could not afford enough specialised attention to agriculture which had assumed a major problem for the country. Besides there was an urgent need for familiarising the farmers with the modern techniques of agriculture. This required the attention of a large number of agricultural officers who could go to the field as well as educate the farmers.

At present there are twentyone agricultural universities in the country. They have played a leading role in bringing about the green revolution and taking the new technology to the field. The country has recently attained record food production and the problem now is not only to maintain the existing pace of development but also to ensure that there is no decrease in the growth rate curve.

Rural growth and universities

The National Staff College of Educational Planners and Administrators organised a conference on 'education for rural development' in New Delhi. It recommended that universities should offer courses on social and economic development in the rural areas as part of their graduate and postgraduate curricula. These courses should be based on an inter-disciplinary approach. It suggested that the University Grants Commission should set up special cell to deal with the promotion of rural development through universities and colleges. The conference also stressed the need for training teachers at all levels to make them aware of the various problems of rural community and the role that they must play in their solution and development. The conference also recommended that education in rural areas should offer opportunities for training young boys and girls for adequate employment in the rural areas. Every rural agency should build an educational component in its programme.

HAU gets Rs. 2.60 crores from ICAR

The Indian Council of Agricultural Research has recommended a financial assistance amounting to Rs. 260.59 lakhs during the Fifth Plan period for the Haryana Agricultural University. The university has fully utilised the operational freedom for identifying the problems of farmers both for research and training. Joint consultation between the officers of the agriculture department and the experts of the university have been regularly held. This has resulted in the universities evolving a structure which includes a systematic and comprehensive design for research as well as extension education and training. All facilities have been provided at Bawal, Kaul and Hissar which represent the three different agro-climatic zones in the State.

The Krishi Gyan Kendras have been provided at all the 18 district headquarters of the State. These kendras have been useful additions to the university set up. They have greatly enlarged its potential. New and useful technology among farmers could be judiciously supplied research information and technology which is relevant and meaningful to farmers.

The university proposes to construct new buildings for the Seed Technology and Food Science Technology laboratories. A hostel for home science college and another for women teachers and research scholars would be constructed. It is proposed to air-condition some parts of the university library.

Rohilkhand campus

The foundation stone of Rohilkhand University buildings was laid by the Chief Minister of Uttar Pradesh in the new campus located five kilometers from Bareilly in the Pilibhit district.

Shri N.D. Tewari in his address said that instead of opening more universities it would be

beneficial to consolidate the existing universities and colleges in the State. Efforts should be made to equip the existing institutions with more up-to-date libraries and modern equipment instead of increasing their number. He said that in order to avoid duplication, constituent colleges of a university should endeavour to specialise in a particular branch of learning. He appealed to the academicians and educationists to help the State Government in preparing viable schemes and projects so that the State Government could take full advantage of the grants provided by the University Grants Commission. In fact viable projects were needed in all spheres such as agriculture, industry, power and irrigation.

Calcutta to review honours courses

The Academic Council of Calcutta University has set up a committee to determine the syllabi, course content and examination system, for the various degree courses with the introduction of the new pattern of education. The committee will also ascertain whether the degree course will be of two years duration for pass course and three years for honours course and whether there should be a bridge course of one year's duration to enable such pass course students to complete the honours course after doing their pass course. The committee would also examine the suggestions of the All-India Technical Education and the All-India Medical Council in this respect.

Cochin workshop on translation

The Department of Hindi, University of Cochin has started an evening postgraduate certificate course in translation and secretarial drafting in Hindi. The Department conducts a regular postgraduate degree course in Hindi language and literature.

The University Grants Commission has now sanctioned funds for organising a workshop on translation. The workshop would

be held from 10th to 16th February, 1977 and about twenty-five participants from Kerala and other South Indian States are expected to participate. Special attention would be focussed on translation of technical subjects, training of translators, translation from Indian to foreign languages and vice-versa, different use of translation, use of technical terms in translation, practical problems of translation.

Aligarh centenary celebrations

The Aligarh Muslim University has completed its hundred years existence on January 8, 1977. The university in the centenary year will organise a number of symposium, seminars and cultural programmes. Old students and eminent personalities would be invited to a commemoration meeting. Efforts would also be made to create more job opportunities for the students during the centenary year.

MAMS recognised

The postgraduate medical qualifications of the Academy of the Medical Sciences granted on the basis of the results of the examinations conducted by the Academy on behalf of the National Board of Examinations is to receive the statutory status. According to Dr. (Miss) S. Padmavati, President of the National Board of Examinations the Government had amended, after consulting the Medical Council of India, the first schedule of the Indian Medical Council Act of 1956 to include MAMS among the recognised medical qualifications.

Courses in tea technology

Postgraduate diploma courses on Tea Technology, Water Power Engineering, River Training and Flood Control Engineering would soon be started in the Jalpaiguri Government Engineering College. The introduction of these subjects would be of a special benefit to the resident of the region.

Nanak Bhavan for Ahmedabad

The Gujarat University will construct Guru Nanak Bhavan at a cost of Rs. five lakhs to be provided by the Central and State Governments under the national scheme of establishing Guru Nanak Bhavans in each State. The foundation stone of the building was laid by Dr. Satish Chandia, Chairman of the University Grants Commission. The building would provide for cafeteria and kitchen for about 200 students. An assembly hall and a seminar hall would also be constructed in addition to a hobby workshop centre. The Bhavan will provide library facilities for specialised studies. Provision would also be made for indoor games for the benefit of students in the Bhavan.

UP provides new scales for Principals

The Uttar Pradesh Government has revised the pay scales of postgraduate degree college principals and brought them at par with the grade of Professors in universities. The new grades are Rs. 1500-2500 and will be effective from January 1, 1977. Those principals who head a college having at least one thousand students, two faculties and postgraduate teaching in a minimum of six subjects will be eligible to get the new salary scale.

New postgraduate courses in JNTU

Jawaharlal Nehru Technological University, Hyderabad, has decided to further enlarge the scope of its courses in the postgraduate school of continuing technological education. The two new degrees of MSc. and Ph.D. would be opened to qualified and eligible candidates anywhere in the country. The scholars would be allowed to work for these research degrees under external guides approved by the university. This would be another significant addition to the courses already conducted by the postgraduate school of the university.

ISM jubilee seminar

As part of the golden jubilee

activities, the Indian School of Mines, Dhanbad, organised an Inter-disciplinary Seminar on Mineral Development in Eastern India. The Focus of the Seminar was on planning for exploration of economic minerals and rocks; scientific exploitation of the minerals; planned beneficiation and utilisation; case studies on integrated planning for exploration, exploitation, beneficiation and utilisation. The Seminar was attended by the representatives of States Directorate of Mines and Geology, various mining and mineral organisations operating in eastern India.

The School also organised an Industrial Exhibition-cum-Book Fair on this occasion.

Ranchi to teach tribal languages

Ranchi University has decided to introduce teaching of Adivasi languages like Oraon, Mundari and Nagpuria from the next academic session. This is for the first time that teaching of the tribal

language would start in a state university. The Inter-University Board of Bihar at its meeting held in Patna approved the creation of one post each of lecturers in these three languages under Ranchi University Service.

Hari Om Ashram Award for Dr. Atam Prakash

Dr. Atam Prakash, Professor and Head of the Department of Surgery, All-India Institute of Medical Sciences, New Delhi, has been awarded the Hari Om Ashram Award for his research on 'Wound healing in diabetes'. The award is given for the best research work in the medical field every year.

Prof. Atam Prakash has also been elected President of the Association of Surgeons of India for 1977. The healing wound in diabetes under controlled conditions according to the researches of Dr. Atam Prakash had opened new vistas in the understanding of the biology of the entire healing process.

INDIAN SCHOOL OF MINES DHANBAD-826004.

No. 615003/76

Dated December 20, 1976

Entrance Examination (1977) for admission to three-year condensed B.Tech degree programmes in (i) Mining Engineering and (ii) Mining Machinery.

Indian School of Mines, a 'deemed' University, invites applications for its all-India Entrance Examination for admission to its three-year condensed programmes leading to the award of the degrees of B.Tech. (Mining Engineering) and B.Tech. (Mining Machinery). The Examination will be held on May, 20 and 21, 1977. The session is likely to commence in the last week of June 1977.

Likely Examination Centres

Bangalore, Bombay, Calcutta, Delhi, Dhanbad, Hyderabad, Nagpur and Udaipur.

Prescribed Qualifications :—A pass in S.S.L.C./Matriculation or Higher Secondary (or equivalent examination and a Diploma in Mining or Mine Surveying for the B.Tech. (Mining Engg.) Programme and Diploma in Electrical/Mechanical Engg. for the B.Tech. (Mining Machinery) Programme. Candidates should have at least **three years** industrial experience. Preference would be given to sponsored candidates.

Prescribed application forms and Memorandum of Information will be available from end of January 1977 upto March 15, 1977 on payment of Rs. 5/- by Money Order payable to Registrar, Indian School of Mines, Dhanbad-826004.

Applications in the prescribed form complete in all respect should reach the Registrar, Indian School of Mines, Dhanbad-826004 by **March 22 1977.**

M S. Ramamurthy
REGISTRAR

NAGPUR UNIVERSITY

Employment Notice

(Combined Advertisement 'C' and 'D'—
See detailed note below)

Applications are invited for the following posts in the University Department so as to reach the undersigned on or before 1st February, 1977.

I. Professor : (1) Economics, (2) Cellulose Technology, (3) Philosophy (Modern Logic), (4) History (Preferably Modern History), (5) Psychology, (6) Sociology, (7) Public Administration, (8) Home-Science (Home-Management/Food and Nutrition), (9) Chemistry (Theoretical/Inorganic/Quantum), (10) Physics, (11) Zoology (Ichthyology), (12) Biochemistry (Metabolism), (13) Mathematics (Modern/Applied Mathematics/Operational Research), (14) Education (New Mathematics), (15) Botany (One each).

II. Reader : (1) German, (2) Pali and Prakrit, (3) Journalism, (4) Economics (Statistics), (5) Economics (Econometrics), (6) Political Science, (7) Geology (Mineral Prospecting/Geo-Chemistry), (8) Applied Mathematics, (9) Education (New Mathematics) (One each).

III. Lecturer : (1) Sanskrit, (2) Russian, (3) French, (4) Zoology (Ichthyology), (5) Geology (Mineral Prospecting/Geo-Chemistry), (6) Education (New Mathematics) (One each).

Scale of Pay :

(i) Professor	...	Rs. 1100-50-1300-60-1600.
(ii) Reader	...	Rs. 700-50-1250.
(iii) Lecturer	...	Rs. 400-40-800-50-950.

Note :—The above scales are likely to be revised as per U.G.C. recommendations.

Qualifications :

(I) Professor : (Except for the Professor in Cellulose Technology).

(i) A Scholar of eminence with a Doctorate Degree of recognised University in the subject concerned with research publications of merit.

(ii) Consistently good academic record with First or High Second Class (B+) Master's Degree in the relevant subject of a recognised University or equivalent degree of a Statutory Institute.

(iii) Ten years teaching experience out of which minimum of 5 years should be of Post-Graduate teaching and research/professional experience in the subject concerned.

(iv) Proved experience of guiding doctoral level research.

Note :—For the post of Professor in Cellulose Technology :—

(i) the candidate must have Degree in Paper Technology or in Chemical Engineering or in Textile Technology in at least high second class and Ph.D. in any of the above subjects with or without Master's Degree or M.Sc. Chemistry in High Second Class with Ph.D. in Cellulose Chemistry or Cellulose Technology.

(ii) At least he must have 10 years teaching, research or industrial experience in the field of Cellulose Technology.

(II) Reader :

(i) Doctorate Degree of a recognised University in the subject concerned.

(ii) Consistently good academic record with First or High Second Class (B+) Master's Degree in the relevant subject of a recognised University or equivalent degree of a Statutory Institute.

(iii) (a) Not less than 5 years experience of the teaching upto Degree Classes;

(b) Post-graduate teaching experience shall be given preference.

(iv) Capacity to guide doctoral level research.

(III) Lecturer :

(i) Doctorate Degree of a recognised University in the subject concerned or published research work of an equally high standard.

(ii) Consistently good academic record with first or high Second Class (B+) Master's Degree in the relevant subject of a recognised University or equivalent degree of a recognised University or Statutory Institute.

(iii) Persons having teaching experience at least upto degree classes will be preferred.

Note :—For the post of Lecturer in Education (New Mathematics), the candidate must have passed B.A. or B.Sc. with New Maths and M.Ed. with Ist Class or Second Class (B+) with Mathematics as one of the subjects).

The Selection Committee may relax the above qualifications in the case of otherwise exceptionally qualified candidate, only if candidates with aforesaid qualifications are not available and if not considered suitable. Such candidates, if selected, will have to acquire the prescribed qualifications within five years from the date of their appointment.

At first instance all the above posts as per advertisement "C" will be treated as reserved for backward communities, viz, SC/ST/VJ/NT/OBC/ and if suitable candidates are not found from the backward communities, candidates as per advertisement "D" will be considered on general merit.

Separate applications are necessary for both "C" and "D" advertisements, as advertisement "C" is exclusively for backward communities.

Eight copies of prescribed application forms, with particulars of details of qualifications, specialisations, etc. will be supplied on payment of non-refundable fee of Rs. 5/- by Crossed Indian Postal Order payable to the undersigned alongwith self-addressed envelope bearing postal stamps worth 00-70 paise.

Last date for supply of blank forms—
21st January, 1977.

B. Y. Aher
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

KANPUR-208016

Advertisement No. 31/76

Applications are invited for the following posts in the Computer Centre of the Indian Institute of Technology, Kanpur.

1. SYSTEMS PROGRAMMER :

One Post

Pay scale : Rs. 700-40-900-EB-40-1100-50-1300

Essential Qualifications and Experience :

A first class or high second class Master's degree in Mathematics, Statistics or Physics, or a Bachelor's degree in Engineering. Five years experience in Assembly language programming. Experience in designing of system software. Selected candidates will be expected to develop and maintain system software, act as consultants and operate computers.

Desirable Experience :

Experience in scheduling and supervising operations in a computer facility.

Age : Less than 35 years.

2. ASSOCIATE PROGRAMMER :

One Post

Pay scale : Rs. 650-30-740-35-880-EB-40-960

Essential Qualifications and Experience :

A first class or high second class Master's degree in Mathematics, Statistics, Physics or Bachelor's degree in Engineering. At least two years of programming experience in FORTRAN and Assembly language. Selected candidates will be expected to develop and maintain programmes, act as consultants and operate computers.

Age : Less than 30 years.

Posts are permanent and carry retirement benefits in the form of CPF Scheme, CPF-cum-Gratuity Scheme or GPF-cum-Pension-cum-Gratuity Scheme as may be opted as per rules. The age of retirement is 60 years.

During the first year the appointment will be on probation. Besides pay, posts carry allowances according to institute rules, which at present correspond to those admissible to Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare for travel inside India, from the place of duty to Kanpur and back by the shortest route.

The Indian Institute of Technology, Kanpur has well equipped laboratories and central facilities. The Computer Centre has I.B.M. 7044, 1401 and 1800 and PDP 1 systems as also ECIL TDC 316 and a group of experienced programmers. The Institute has a well stocked library with more than 1,50,000 volumes and 1,300 periodicals. The campus facilities include Primary and Higher Secondary Schools, a Health Centre and a Shopping Centre.

Applications should be made on the prescribed forms obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 x 10 cms. size. Applications should be accompanied by a postal order for Rs. 7.50 (Rs. 1.86 for SC/ST candidates). All applications should reach the Registrar, Indian Institute of Technology, Kanpur-208016, U.P. on or before **January 31, 1977**.

Candidates selected will be expected to join the Institute at the earliest.

ROHTAK UNIVERSITY, ROHTAK

Advertisement No. 1/77

Applications are invited on plain paper (through proper channel in the case of those already in employment) for the following posts, furnishing complete bio-data i.e. name, father's name,

date and place of birth, nationality, permanent and correspondence addresses, academic and professional attainments from Matriculation onwards, alongwith attested copies of certificates/testimonials, publication(s) and Research project(s) undertaken; languages known, details of visits to foreign countries, names and addresses of atleast two persons well acquainted with the academic and professional work, so as to reach the REGISTRAR, ROHTAK UNIVERSITY, ROHTAK latest by **JANUARY 25, 1977** (February 8, 1977 for those who are abroad). The applications should be accompanied with Indian Postal Order (s) for Rs. 7.50 drawn in favour of the Comptroller, Rohtak University, Rohtak payable at Rohtak Post Office. Ex-servicemen, Scheduled Caste/Tribes & Backward Class candidates exempted from application fee.

1. Readers in Physics in the grade of Rs. 1100-50-1300-60-1900.
2. Lecturers in Physics in the grade of Rs. 700-40-1100-50-1600.

The posts also carry usual allowances as admissible under the University rules in force from time to time.

QUALIFICATIONS :—

- a) Consistently good academic record with 1st or 2nd class Master's degree (with atleast 55% marks) in a relevant subject or an equivalent degree of a foreign University; and
 - b) A Doctor's degree or published work of an equally high standard.
- (contd. on page-47)

INDIAN SCHOOL OF MINES DHANBAD-826004.

No. 615002/76

Dated December 20, 1976

Entrance Examination—1977

The Indian School of Mines, a 'deemed' University, invite applications for the Entrance Examination for admission to its 4-year programme of studies leading to the award of (a) B. Tech. degrees in Mining Engineering and Petroleum Engineering, and (b) M.Sc. degrees in Applied Geology and Applied Geophysics. A B. c. (Hons.) degrees in Applied Geology and a B.Sc. degree in Applied Geophysics is awarded after successful completion of two years of the 4-year programme.

The Entrance Examination will be held on Friday, the 13th and Saturday, the 14th of May, 1977. The new session is likely to commence in the last week of June 1977.

The likely centres for the Entrance Examination are :— Ahmedabad, Assansol, Bangalore, Bhopal, Bombay, Baroda, Calcutta, Chandigath, Coimbatore, Cuttack, Delhi, Dhanbad, Dibrugarh, Gauhati, Gudur, Hyderabad Jaipur, Jodhpur, Keonjhar, Lucknow, Madras, Muzaffarpur, Nagpur, Patna, Ranchi, Sahdol, Simla, Srinagar, Trivandrum, Waltair.

Prescribed Qualifications :—A pass in the plus 2 stage after 10 years schools stage (Intermediate Science, 2 years Pre-degree/ Pre-University Examination) with Chemistry, Mathematics, Physics and English or 1st year examination of the 3-year degree programme or equivalent examination (with Physics, Chemistry, Mathematics and English). Those who have appeared in the above examinations are also eligible to apply but should submit necessary evidence of having passed the qualifying examination by June 25, 1977.

Age Limit :—21 years for B.Tech in Petroleum Engineering and 22 years for other programmes as on October 1, 1977. The age limit is relaxable by three years for Scheduled Caste/Scheduled Tribe candidates.

Prescribed application forms and Memorandum of Information may be available from January 30, 1977 upto March 10, 1977 on payment of Rs. 5/- by **Money Order** payable to the Registrar, Indian School of Mines, Dhanbad-826004.

Applications in the prescribed form complete in all respects should reach the undersigned latest by **March 15, 1977**

M.S. Ramamurthy
REGISTRAR

RAVISHANKAR UNIVERSITY RAIPUR

Advertisement

Applications are invited on the prescribed form (Seven copies) obtainable from the Registrar on payment of Rs. 5.00 in cash or by crossed Bank draft with a self addressed envelope of 23×11 Cm. of size with postage stamp worth Rs. 1.50 affixed on it for the following posts :

Applications along with copies of testimonials & certificates must reach the Registrar's office on or before 31st January 1977.

I. PROFESSORS	No.	Specialisations
(i) Bio-Sciences	one	Organismal Physiology, Environmental biology and microbiology.
(ii) Economics	one	Growth and Development.
(iii) Linguistics	one	Open (Phonemics & Phonetics Desirable.)
(iv) Mathematics and Statistics.	one	Statistics.
II. READERS		
(i) Anthropology	One	Social Anthropology
(ii) Bio-Sciences	One	Organismal Physiology, Environmental biology & Microbiology.
(iii) Chemistry	One	Analytical (Knowledge of Chemical analysis of Environments Instrumental method Desirable.)
(iv) History	One	Modern Indian History.
(v) Physics	One	Solid State Physics
(vi) Psychology	One	Industrial
(vii) Sociology	Two	(i) Industrial.
		(ii) Inter-disciplinary-Research work on Indian Society and traditional Culture.
III. LECTURERS		
(i) Anthropology	One	Open
(ii) Bio-Sciences	Two	Cytogenetics, Cell Physiology and Bio-Chemistry.
(iii) Chemistry	One	Open
(iv) Geography	One	Open
(v) History	One	Modern Indian History
(vi) Mathematics & Statistics	Two	(i) Statistics
		(ii) Mathematics.

SCALES OF PAY

(i) Professor	1100-50-1300-60-1600/-
(ii) Reader	700-50-1250/-
(iii) Lecturer	400-40-800-50-950/-

NOTE :—The question of the revision of Pay Scales as per UGC recommendations of pay scales is under consideration of the State Government. As and when the revised pay scales come into force, the qualifications and other conditions appurtenant thereto shall ipso facto follow suit.

Qualifications

1. Professors

- A first or Second class Master's degree of an Indian University or an equivalent qualification of a Foreign University in the subject concerned.
- Either a degree of Doctorate standard or published work of high standard.

- Not less than 10 years experience of Postgraduate teaching and experience of successfully guiding research.

2. Readers

- (a) and (b) ; Same as for Professor with postgraduate teaching experience of five years and three years experience of guiding research.

3. Lecturers

- (a) Same as for Professor and Reader and (b) A research degree in the subject or experience of

INDIRA KALA SANGIT VISHWAVIDYALAYA KHAIRAGARH (M.P.)

(University of Music and Fine Arts)

Corrigendum

The last date for receipt of applications for all the posts of Professor, Readers and Lecturers originally published in the University Advertisement dated the 6th December, 1976, is extended upto the 15th March, 1977. Last date for other posts viz :— Research Assistant, Tabla Instructor, Technicians (Musical Instruments) and Tabla Accompanist remains the same i.e. 25th January, 1977.

D.K. Ghosh
REGISTRAR

UNIVERSITY OF JABALPUR

Advertisement

No. Estt./76/2319

Dated 30th,
December, 1976.

Applications on plain paper containing details of educational qualifications and experience etc. accompanied with a crossed Indian Postal Order for Rs. 5/- are invited for post of Registrar in the scale of Rs. 1100-50-1300-60-1600 with usual allowances permissible by the University. A higher starting salary may be given to an exceptionally qualified and experienced person. Benefits of Contributory Provident Fund and leave will be available according to University Rules. A candidate should not be over 55 years on 1st February, 1977 and must possess at least a Second Class Master's degree with at least 10 years' experience of work in an administrative post in a University or in an administrative post in an Education Department/Statutory body of the Central or the State Government or experience as a University or College teacher for at least 12 years. The applicants serving in the employ of State/Central Governments of University, should have continuous good service record. Preference will be given to persons having experience of Administrative, Examination and Accounts work. Proficiency in Hindi is essential. Persons already in service should apply through proper Channel They may send an advance copy of their application within the due date and should bring 'No objection Certificate' from their employers when called for interview. Applications along with copies of testimonials should reach the undersigned on or before 31st January, 1977. All applications should be sent by Registered post.

(B.K. Mishra)

Asstt. Registrar (Adm)

University of Jabalpur, Jabalpur.

THE UNIVERSITY OF KASHMIR SRINAGAR NOTICE

In continuation of this office notice of even No dated 29-11-1976, the last date for receipt of application forms for the posts of Reader in Urdu and Physics is extended upto 31st January, 1977.

(Saif-ud-Din Soz)
REGISTRAR

teaching Degree and/or postgraduate classes will be desirable qualification.

General :

Fifteen percent of the posts in each department are reserved for the candidates belonging to Schedule caste and 18% for the Scheduled Tribe candidates.

Contributory Provident Fund, dearness and other allowances and other benefits are available as per University Rules. Higher initial salary in the scale may be considered in case of exceptionally qualified and experienced persons. Qualifications and Experience relaxable in special cases. Candidates in employment must submit their applications through their present Employer. Proficiency in Hindi will be preferred. The University reserves the right not to fill any post without assigning any reason thereof. Applicants called for interview will have to bear their own expenses.

H. N. Shukla
REGISTRAR

**CENTRAL INSTITUTE OF ENGLISH
AND FOREIGN LANGUAGES**

HYDERABAD 500 007

Advertisement No. XIV/1976-77

Applications on the prescribed form together with necessary application fee, are invited for the following posts, in the Institute service, so as to reach the undersigned on or before 25-1-1977.

I. Professors/Senior Fellows

**Scale : 1500-60-1800-100-2000-125/
2-2500**

1. Professor in the Department of English Literature
2. Professor in the Department of Arabic

Qualifications

Essential

- i. Consistently good academic record with at least a high second class (B+) Master's degree in the Language concerned.
- ii. A Doctorate degree or published work of an equally high standard.
- iii. At least five years' experience of teaching post-graduate classes and guiding research in a senior position.
- iv. **For Post No. 2—Specialisation in Modern Arabic.**

Desirable

For Post No. 1

- i. Stylistics and Literary Interpretation and/or Specialisation in Modern English Literature and Criticism.
- ii. Special interest in English Language Teaching Programmes.
- iii. Special interest in Aesthetics.

For Post No. 2

Experience of organising courses for training of teachers/translators/interpreters in Modern Arabic.

II. Readers/Fellows in the following Departments/Centre

Scale : 1200-50-1300-60-1900

1. Department of Phonetics & Spoken English
2. Department of Methods
3. Department of Materials Production
4. Department of Extension Services
5. Department of Radio, TV & Cinematography
6. Department of Correspondence Courses
7. Department of French
8. Department of German
9. Department of Russian
10. Department of Arabic

**11. Regional Centre, Shillong
Qualifications**

For Post No. 1

Essential

- i. Consistently good academic record with at least a high second class (B+) Master's degree in English.
- ii. A Doctorate degree in Linguistics/Phonetics or published work of an equally high standard.
- iii. Specialised training in the Phonetics of English.
- iv. At least five years' experience of teaching at the college level or in a teacher-training institution including experience of teaching Phonetics and Spoken English.

Desirable

Specialisation in experimental Phonetics.

For Posts 2,3,4,6 and 11

Essential

- i. Consistently good academic record with at least a high second class (B+) Masters' degree in English, Education or Psychology, with high level competence in English.
- ii. A Doctorate degree or published work of an equally high standard.
- iii. Specialisation in Psycholinguistics or Socio-linguistics/Curriculum Construction/Educational Technology/Programmed Instruction/Computer Programming/Stylistics and Literary Interpretation.
- iv. At least five years' experience of teaching at the college level or in a teacher training institution

Desirable

For Posts 2,3,4 and 11

- i. Specialised training in the teaching of English.
- ii. Experience of producing and evaluating teaching materials.

For Post No. 6

Experience of teaching English through Mass Media or Correspondence Course.

For Post No. 5

Essential

- i. Consistently good academic record with at least a high second class (B+) Masters' degree in English or Education, Mass Communication or Mass Communication Arts with high level competence in English.
- ii. A Doctorate degree or published work of an equally high standard.

- iii. Specialised training in teaching through Mass Media
- iv. At least five years' experience of teaching producing educational broadcasts in a recognised institution.

Desirable

Knowledge of broadcasting media and experience of producing TV Programmes.

For Posts 7,8,9 and 10

Essential

- i. Consistently good academic record with at least a high second class (B+) Master's degree in the subject concerned or an equivalent qualification with a good command over English.
- ii. A Doctorate degree or published work of an equally high standard.
- iii. At least five years' experience of teaching the concerned subject at the college level.
- iv. **For Post No. 10 : Specialisation in Modern Arabic.**

Desirable

- i. Specialised training in the teaching of the concerned subject.
- ii. Experience of producing materials for the teaching of the subject concerned and/or translation and interpretation.
- iii. High level competence in English.

III. Lecturers/Associate Fellows in the following Departments/Centre

Scale : 700-40-1100-50-1600

1. Department of Phonetics & Spoken English
2. Department of Linguistics & Contemporary English
3. Department of Extension Services
4. Department of Evaluation
5. Regional Centre, Shillong
6. Department of Methods
7. Department of English Literature
8. Department of Materials Production
9. Department of French
10. Department of German
11. Department of Russian
12. Department of Arabic
13. Department of Radio, TV & Cinematography

Qualifications

For Posts 1 to 12

Essential

- i. Consistently good academic record with at least a high second class (B+) Master's degree in the subject concerned.
- ii. A Doctorate degree or published work of an equally high standard.

- i. ii. For Posts 1,8=A Post-Graduate Degree or Diploma in English Language Teaching or English Studies, or Linguistics or Phonetics or Applied Linguistics.
- iv. For Post No. 12—Specialisation in Modern Arabic

Desirable

For Posts 1,3 and 5

Experience of Producing teaching materials in English and organising ELT Programmes.

For Post No. 2

Special interest in the field of Grammar

For Post No. 4

Special training in testing techniques and relevant statistical procedures.

For Posts 6 and 8

Experience of producing teaching materials in English and organising ELT Programmes.

For Posts No. 7

Special interest in Stylistics and Literary Interpretation and/or Modern English Literature and Criticism.

For Posts 9 to 12

- i. Experience of teaching/producing materials in French/German/Russian/Modern Arabic.
- ii. High level competence in English.

For Post No. 13

Essential

- i. Consistently good academic record with at least a high second class (B+) Master's degree in English or Education or Mass Communication or Mass Communication Arts, with high level competence in English.
- ii. A Doctorate degree or published work of an equally high standard.
- iii. Specialised training in the teaching of English through Mass Media.

Desirable

Knowledge of broadcasting media and experience of producing TV Programmes.

Qualifications for Associate Fellows

Essential

- i. Consistently good academic record with at least a high second class (B+) Master's degree in the subject concerned.
- ii. Some teaching and/or research experience.

Desirable

Specialised training in the teaching of the subject concerned.

1. Assistant Registrar

Scale : 700-40-900-EB-40-1100-50-1300

- i. A Post-Graduate with 4 years experience or a graduate with 8 years experience in a supervisory capacity in a Government or Semi-Government organisation dealing with higher education.
- ii. Knowledge of Government of India procedures in financial and service matters.
- iii. Experience in the preparation of agenda papers, drafting of minutes for meetings of academic bodies etc.

2. Manager (Publications)

Scale : 700-40-900-EB-40-1100-50-1300

Essential

- i. A degree or Diploma in Printing Technology from a recognised University or Institute.
- ii. A minimum of 3 years experience in handling both letter press and off-set process, preferably in a supervisory capacity.

Desirable

- i. A university degree with a high level competence in English.
- ii. Experience of work in a University or a Government or Semi-Government Text-book Printing Press.

3. Documentalist

Scale : 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200

- i. At least a second class Master's degree preferably in English.
- ii. A degree or diploma in Library Science or Archives.
- iii. 5 years experience as Documentalist in a recognised Institution.

Note

1. Allowances at Central Government rates with the benefit of Contributory Provident Fund-cum-Gratuity from the date of their being placed on probation.
2. A higher start in the grade may be considered for specially qualified candidates.
3. Qualifications are relaxable in exceptional cases. Due consideration will be given to candidates belonging to Scheduled Castes/Tribes at the level of Lecturers/Associate Fellows, if they are considered fit.
4. Appointments of Senior Fellows, Fellows and Associate Fellows will be made on contract basis for a period ranging from one to three years.

Age

- | | |
|--------------------|-----------------------------------|
| For Professors : | } Relaxable in exceptional cases. |
| Not below 35 years | |
| 1. For Readers : | |
| Not below 30 years | |

Instructions

1. **Separate Application should be made for each post.**
2. Post No. 1 under Professors, Posts Nos. 2,3 and 7 under Readers are permanent. The rest are temporary but likely to continue except posts under Sl. No. 13 of Lecturers which are only for a period of one on two years.
3. Age of retirement for teaching staff 60 years. Age of retirement for non-teaching staff 58 years.
4. Candidates must enclose **seven copies of lists of papers published**, if any, with each application indicating the journals and dates along with **one copy of each of their publications.**
5. In case the Selection Committee finds that the candidates interviewed by them are not up to the mark, the Committee may consider them for a lower cadre post.
6. The selected candidates will be expected to participate in the teaching and research programmes in other departments.
7. The selected candidates will be required to work in Hyderabad or at any of the Regional Centres of the Institute.
8. Candidates selected for the posts of Lecturers/Associate Fellows may be required to work at a Regional Institute of English or one of the State English Language Teaching Institutes.
9. Those who had applied in response to our earlier advertisement for Posts No. 2 and 3 of Readers need not apply again.
10. Candidates called for interview from a place outside Hyderabad will be paid a contribution towards their travelling expenses at the rate of Second Class Railway fare, including sleeper coach charges from the place of their work or residence whichever is nearer by the shortest routes, subject to production of rail receipt.
11. Application forms can be had from the Registrar, Central Institute of English and Foreign Languages, Hyderabad 500 007 (India) on payment of Rs. 2/- in person or by postal order payable to the Director, Central Institute of English and Foreign Languages, and by sending a self addressed envelope (10 cm x 23 cm) stamped for ordinary (55 np) or Registered Post (Rs. 2.55).

Sd/-

**L.B. Deshpande
REGISTRAR**

Integrated Rural Development

(Contd. from Page 31)

There are two main aspects of integrated rural development :

- (i) That such plans must form an important part of the overall state or national development plans; and
- (ii) all essential inter-related socio-political, economic and technical factors must be taken into account in an integrated manner.

There are certain basic requirements for such an integrated plan of action :

- (i) Provision to the community of more productive and remunerative employment not necessary in agriculture;
- (ii) A more equitable distribution of the benefits of production-material as well as non-material and a more equal access to the services which, at the moment, are pre-empted by the powerful and vested interests;
- (iii) A fuller participation of the people in development activities and in the relevant decision-making processes, organization of a proper communication systems, designed to create a high level of receptivity among the beneficiaries;
- (iv) A more rational management of renewable and non-renewable resources.

Agricultural Universities with their expertise have a significant role to play in this context, viz. in the preparation of the resource inventories, particularly those relating to the physical assets of an area, such as soil, surface water, ground water, and other resources, soil conservation, forestry, social farming, use of pastures, live-stock development and the

introduction of appropriate practices of agriculture in those areas.

Pantnagar University has done some innovative work, in this connection, by working on a small Rural Area Research and Action Plan in one of the typical group of villages in Bhikiasen Block of Ranikhet Sub-Division in Almora district. The idea was to take the catchment of the river basin as the area of operations. The results have been published separately and discussed in a seminar on Regional/ Area Planning and Research Development organized by the University in May 1976. The RAPRAP project was an inter-disciplinary approach to all problems of development in the area, including land use, soil conservation, social forestry, improvement and adoption of agricultural practices, livestock development and marketing and has yielded some valuable results which can be summarised as follows :

- (a) That by working out certain crop rotations, the average earning of the farmer can be significantly increased;
- (b) That the present yields of crop can be increased considerably even under rainfed conditions with proper adoption of new technology via agricultural extension;
- (c) That there is a great scope to develop vegetables and fruits cultivation provided the present infrastructure is strengthened. Certain new crops like soybean, maize, vegetables, chillies and triticale could suitably replace the traditional crops and even increase cropping intensity.
- (d) A credit plan has to be built up along with plans for improved agricultural practices.

The University has since then drawn up another plan for Bhimtal in Nainital district and is, at the moment, engaged in preparing, in collaboration with the ICAR, a plan for Tehri district in the Garhwal Division.

(Contd. from Page 43)

EXPERIENCE :—

For Readers : At least five years' teaching experience in honours/ post-graduate classes or post-doctoral research.

For Lecturers : Two years' teaching experience or post doctoral research.

Qualification and experience are relaxable in the case of exceptionally qualified persons.

SPECIALIZATION :

Lasers and masers, spectroscopy, solid state physics, electronics or other allied fields.

To give a broad understanding, the conceptual basis and intellectual techniques this University is introducing a new 3-Year integrated M. Phil course in Physics after B.Sc. degree from the next session. Specialisations in quantum/solid state electronics and electronics etc., will also be offered. A good laser research centre under Dr. T.S. Jaseja is also to be set up. Inter-related research in the fields of Spectroscopy, Solid State Electronics and Electronics is sought to be strengthened.

REGISTRAR

Wanted Lecturers in Economics and English in the U.G.C. pay scale. Qualifications according to the U. G. C. Norms. Apply to the undersigned, attaching copies of certificates & mark-sheets matriculation onward with an I.P.O. of Rs. 5/- by 15.2.77. Ladies also may apply.

S. N. Singh
Principal
Tuensang College, Tuensang
Nagaland

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Bohra, Bheru Mohanlal. A model to study the lattice dynamics of hexagonal metals. I.I.T., Delhi.
2. Jagdish Mitter. A study of generalized measures of distortion and probability of error. University of Delhi.
3. Narasimha Rao, K.L. Generalized Kothe sequence spaces and decompositions I.I.T. Kanpur
4. Paimajumdar, Himadri. Some aspects of transition phenomena and decay laws in the statistical structure of turbulence. University of Calcutta.
5. Patle, Ramchandra Keshavlal. Convergence and summability of orthogonal series. M.S. University of Baroda.
6. Poddar, Samrendranarayan. Plane problems of four cross-shaped or two fine cracks in the mathematical theory of elasticity. University of Calcutta.
7. Saldanha, J.S.V. Numerical methods for ordinary differential equations. I.I.T. Delhi.
8. Sree Hari Rao, V. Stability of motion under impulsive perturbations. I.I.T. Kanpur
9. Umarani, Prakash Girimallappa. Some studies in univalent functions. Karnatak University.

Statistics

1. Visweswara Rao, K. Efficiency of anthropometric indices for the diagnosis of malnutrition. Osmania University.

Physics

1. Chattopadhyay, Deepak Kumar. On certain state assignment techniques and synchronus sequential machine. University of Calcutta.
2. Desarkar, Sanjib Chandra. Studies on state ministration and state assignments of synchronous sequential machines. University of Calcutta.
3. Guhathakurta, Barin Kumar. Orbiting and synchronous satellite studies of ionospheric electron content and irregularities of electron density of low latitudes. University of Calcutta.
4. Gupta, Bharat Bhushan. Analysis of human blood flow through narrow tubes. I.I.T. Delhi.
5. Halder, Sujit Kumar. X-ray diffraction studies on alloys and thin metallic films. University of Calcutta
6. Jain, Prem Chand. Refinements in the method of structures of analysis of polytypes and determination of crystal structures 21 new CdI₂ polytypes. University of Delhi.
7. Jambagi, Narhari Madhavrao. Synthesis, structural and optical, and properties of mixed halophosphate phosphors, Shivaji University.
8. Kamalasanan, M. N. Study of the spectra of some diatomic molecules (MgBr, CaBr, CaI and SrI). M.S. University of Baroda.
9. Minocha, Lalit Mohan. Development and characterisation of carbon fibres. University of Delhi.
10. Nag, Chitra. Some aspects of ligand field and crystal paramagnetism. University of Delhi.
11. Nagpal, Kailash Chander. Crystal structure and thermal expansion of InSe. University of Delhi.
12. Narayanamurty, Piratla. Electron spin resonance studies of some X-irradiated doped single crystals. Andhra University.
13. Sanyal, Suvra. Study of fast timing with plastic scintillation detectors and measurement of half lives of 80.2-, 341.1-, 364.5- and 404.8- KeV levels in ¹³¹Xe. University of Delhi.
14. Sharma, Manohar Lal. Investigations on certain models for low energy scattering and resonance production in p p annihilation. University of Delhi.

Chemistry

1. Bandyopadhyay, Santosh Kumar. Studies on triterpenoids. University of Calcutta
2. Baxi, S.J. Studies on chromatography and optical activity. Saurashtra University.
3. Bhalla, Manjit Singh. Studies on the preparation and properties of some new organometallic compounds of molybdenum (VI). University of Delhi.
4. Bhattacharya, Kashi Nath. Studies in quantitation of metal ions by paper chromatography. Jiwaji University.
5. Chacharkar, Madhukar Parshuramji. Some activation analysis with low-level antimony-beryllium neutron source and solvent extraction of indium and iron by diphenyl sulfoxide. Nagpur University.
6. Chattopadhyay, Samir Kumar. Synthetic studies related to diterpenoids Part II: A novel synthesis of ring system related to pseudoclovene. University of Calcutta.
7. Deshpande, Vasant Damodar. Studies on lanthanide complexes. Nagpur University.
8. Haibatti, Shivanappa Khandappa. Studies of vibrational intensities in the condensed phase. Karnatak University.
9. Javed Iqbal. Terpene aldehydes of shellac: Isolation reactions, spectra and their role in resin formation. University of Delhi.
10. Johri, Prabhash Chander. Studies on physico-chemical aspects of the formation of melanoidins on the colour of technical sugar solution. Kanpur University.
11. Khare, Vijaya Prakash. The stability constants of transition metal complexes of hydroxamic acids. Awadhesh Pratap Singh University.
12. Malakar, Debasish. Studies on naturally occurring polycyclic compounds. University of Calcutta.
13. Misra, B.C. Alkali metal ion binding to peptides, polypeptides and proteins. I.I.T., Kanpur.
14. Mohanty, Trijama Ranjan. Kinetics of substitution and polymerisation reactions in solution. Utkal University.
15. Natarajan, R. Study of dielectric properties of films using microwave techniques. I.I.T. Delhi.
16. Patel, Sanmukhlal Dayalbhair. Pas-format dehyde polymers: Reactions of aminosalicyclic acids. Sardar Patel University.
17. Pathak, Gaurkumar. Derivatographic Studies of inorganic compounds. University of Calcutta.
18. Pradhan, Dilip Kumar. Chemistry of the extractives of some Indian medicinal plants. University of Calcutta.
19. Prasunamba, K. Lakshmi. Chemical examination of some leguminous plants and synthesis of insecticidal and fish-toxic oxygen heterocyclics. Osmania University.
20. Rama Krishna Raju, Nadimappalli. Photosensitised redox reactions. Osmania University.
21. Rav, Sibdas. Synthesis of metabolite analogues: Synthesis of compounds related to 4(5)-Aminimidazole-5(4) carboxamide. University of Calcutta.
22. Santhamma, M.T. Spectral and thermal investigations on peroxo species of group IV A elements. I.I.T., Delhi.
23. Shukla, Raj Kishore. Kinetics and mechanisms of oxidation of some organic compounds by metallic ion in an aqueous medium. Kanpur University.

Earth Sciences

1. Srivastava, Vijay Kumar. Study of induced groundwater recharge. I.I.T., Delhi.

Engineering & Technology

1. Bakshi, R. K. Exhaust emissions and performance evaluation of a spark ignition engine burning methanol and methanol-gasoline mixtures. I.I.T., Delhi.
2. Bhattacharya, S. Studies on electrochemical dissolution of iron (as chloride) from iron bearing minerals. I.I.T., Bombay.

3. Bollapragada, Subba Rao. Disposal of distillery waste by anaerobic lagoons. Shivaji University.
4. Das, Jamini Kanta. Some studies on flat linear induction pumps for conducting fluids. University of Calcutta.
5. Dube, Govind Prasad. Large plastic deformations of simple structures under transverse impact. I.I.T., Delhi.
6. Krishnasami, M. Decoupled multivariate time series models for multisite streamflows. I.I.T., Kanpur.
7. Madan, Bharat Bhushan. Some studies on optimum receiver design via recursive state estimation. I.I.T. Delhi.
8. Raghavan, M. Vijaya. Some aspects of dynamic performance of the human middle ear. I.I.T., Delhi.
9. Raisinghania, Muralidhar. The behaviour of ferrocement slabs under different loads. I.I.T., Kanpur.
10. Ranganathan, R. Reliability analysis and design of prestressed concrete beams at different limit states. I.I.T., Kanpur.
11. Rathor, Tejpal S. Transfer function realization suitable for integration. University of Indore.
12. Sahay, Chittaranjan. Dynamics of discontinuous chip formation in orthogonal metal cutting. I.I.T., Delhi.
13. Shah, S.D. Engineering, geological studies of Kadana Dam region, Panchmahals District, Gujarat. I.I.T., Bombay.
14. Sddiqi, M.U. A study of permutation in variant linear systems. I.I.T., Kanpur.
15. Suryanarayana, P. Analysis and behaviour of long restrained columns under uniaxial and biaxial bending. I.I.T., Delhi.
16. Syed Gulam Samdhani. Studies on crystallization and thermal expansion in certain ternary aluminosilicate and borosilicate glasses. Osmania University.

BIOLOGICAL SCIENCES

Anthropology

1. Ghosh, Guru Charan. The finger and palm prints of twelve central Indian dravidian speaking tribes: A comparative study of the Raj Gond, Pardhan Kolan, Noik Gond, Muria, Dhurwa Dorla, Ollar-Gadaba, Nanakdora, Pengo and Kond. University of Calcutta.
2. Malik, Shanti Lal. Age changes and few biological responses at high altitude: A study among male bods of Ladakh. University of Delhi.

Biochemistry

1. Basumallik, Asis Kumar. Studies on serum lipoprotein metabolism in albino rats. University of Calcutta.
2. Ghatak, Sibnath. Studies on some aspects of carbohydrate transport in *Leishmania donovani*. University of Calcutta.
3. Mitra, Gopa. Biochemical studies on the action of tetra hydro cannabinol. University of Calcutta.
4. Pathak, Girdhari Lal. Effect of mutagenic agents on the biochemical activity of pea, cowpea and sesamom. University of Udaipur.
5. Sunanda Prakash. Microbial chemistry of algal bacterial symbiosis in laboratory model high rate oxidation ponds using certain mix algal and Baroda new settle sewage. M. S. University of Baroda.

Botany

1. Dadhich, Laxmi Kant. An ecological survey of the vegetation of Jhamarkotra Hills and its neighbourhood (Udaipur), South-East Rajasthan. University of Udaipur.
2. Daniel, Mammen. Chemotaxonomic studies on some selected angiospermic taxa. M.S. University of Baroda.
3. Dashore, Mohan Shankar. Control of algae in surface water supplies in Rajasthan. University of Udaipur.
4. Hegde, Ravindra Ramakrishana. Histochemistry of reproductive structures in some members of leguminosae. Karnatak University.
5. Kulkarni, Ramchandra Khando. Physiology of salt tolerance in plants. Shivaji University.
6. Linganna Reddy, Datta Reddy. Studies on physiology of helminthosporium species. Marathwada University.

7. Nag, Bimal. Certain aspects of eradication and utilization of water hyacinth, *Eichhonia crassipes*, Mart. Solms. University of Gauhati.

8. Nigam, Manorama. Ecological studies with special reference to growth and productivity of *Celsia coromandeliana* Vahl from Rewa (M.P.). Awadhesh Pratap Singh University.
9. Pullaiah, Thammineni. Embryological investigations in the compositae with some observations on the basellaceae. Andhra University.
10. Sangat Singh. Studies on water metabolism in gram, *Cicer arietinum* L. Punjab Agricultural University.
11. Subhash K. Studies on experimental mutagenesis of certain members of solanaceae. Osmania University.
12. Vijayakumar. Hormonal basis of growth and yield regulations in dwarf-wheats, *Triticum aestivum* L. Punjab Agricultural.

Zoology

1. Bajpeyi, Virender Kumar. Ultrastructural studies on certain facts of tubal function. Kanpur University.
2. Bandyopadhyaya, Mahitosh. Morphological and histochemical studies on the male reproductive systems of some Indian hemiptera (Insecta). University of Burdwan.
3. Bentur, Jagdish Sanmallappa. Physiology of reproduction in the cricket, *Plebeigryllus guttiventris* Walker. Karnatak University.
4. Betole, Ulhas Kesharao. Studies on the hypothalamo-hypophyseal system of the catfish, *Clarias batrachus* (Linn). Nagpur University.
5. Bhatt, Devendra Kumar. Studies on the distribution of certain enzymes in the brain of squirrel, *Funambulus palmarum* by histoenzymological and biochemical parameters. University of Udaipur.
6. Chakravarti, Debaprasad. Cellular intricacies in the regeneration of hydra. University of Calcutta.
7. Chattopadhyaya, Punyabrata. Studies on the external morphology, bionomics and control of *Latoia bicolor* Walker (Lepidoptera: Limacodidae) and *Eoerysa flavocapitata* Muir (Homoptera: Delphacidae): Two insects of economic importance. University of Burdwan.
8. Dabhade, Khanderrao Balkrishna. Studies on the hypothalamo-hypophysial-interrenal axis in a teleost fish, *Clarias batrachus* (Linn.). Nagpur University.
9. Ghosh, Maya. Studies on the incorporation of estradiol and progesterone by the uterus and other genital tract tissues under the influence of intrauterine devices. Kanpur University.
10. Mitra, Dharitri. Effects of some antibiotics on the reproductive organs of the grasshopper, *Gesonula punctifrons* Stal (Insecta: Orthoptera: Acrididae). University of Calcutta.
11. Mukhopadhyay, Kamakshyaprasad. Studies on the morphology and taxonomy of the protozoan parasites of *Oligochaete* worms of West Bengal. University of Calcutta.
12. Pandey, Prabhu Nath. Studies on host preference and selection of certain phytophagous insects. Kanpur University.
13. Satpute, Laxman. Studies on caryophyllaeidae (cestoda) from siluroid fishes. Ravishankar University.
14. Shukla, Raghav Prasad. Studies on meta cercariae parasitic in some of our freshwater edible fishes with special reference to their identity and significance. Kanpur University.
15. Sinha, Narendradeo Prasad. Studies on some aspects of water and electrolyte metabolism in certain amphibious teleostean fishes. Bhagalpur University.
16. Sobhana, B. Studies on certain cyprinid fishes of Kerala. University of Kerala.
17. Venkata Reddy, V. Studies on mechanisms underlying acclimation to salinity in the fresh water field crab, *Paratelphusa hydrodromous* (Herbst). Sri Venkateswara University.

Medical Sciences

1. Kohli, Krishan Kumar. Biochemical effects of dieldrin. University of Delhi.

Agriculture

1. Agrawal, Mohan Lal. Manurial studies on onion, *Allium cepa* L. Kanpur University.
2. Bashisht Narayan. Mineralogy of Vindhyan soils in relation to erosion and soil development. Kanpur University.
3. Durge, Arvind Shankar Rao. Studies on the phosphate availability in calcareous soils of Rajasthan and factors affecting it. University of Udaipur.
4. Grewal, Iqbal Singh. Multivariate analysis of adoption of high yielding wheat technology in arid, central and wet zones of Punjab State. Punjab Agricultural University.
5. Gupta, Radhe Shyam. Numerical morpho-taxonomy of noctuid pests of Rajasthan. University of Udaipur.
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University News

A CHRONICLE OF HIGHER EDUCATION & RESEARCH FEBRUARY 1, 1977 80 PAISE



Dr. B. D. Nag Chaudhuri, Vice-Chancellor of Jawaharlal Nehru University
delivering the convocation address at Kanpur University

- Students Evaluation
and Internal
Assessment

- Faculty Status for
Librarians

- Students
Participation in
University
Governance in
Australia

- Sport Medicine
in Indian Sports

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No. Dev./76/2/Estt/Advt/GHA/8140

Dated : 4.1.77

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(Likely to be revised).

(a), (b) & (c) same as for professor with Postgraduate teaching experience of Five years and Three years experience of guiding research.

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M.N. Bhuraskar
Actg. Registrar

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2.	Statistics	1	1	—	
3.	Chemistry	—	1	* 4	
4.	Geology	—	1	—	
5.	Botany	—	2	1	
6.	Zoology	—	† 2	† 4	
7.	Hindi	—	2	—	
8.	Sanskrit	—	1	—	
9.	English	—	1	—	
10.	Political Science	—	1	1	

Note : * Out of the four posts indicated—One post of Lecturer in Chemistry is temporary for the present but likely to continue.

† Out of the two posts of Reader and four posts of Lecturers—One post of Reader and one post of Lecturer in Zoology are temporary for the present and tenable upto 12.11.1977 and 10.10.1977 respectively but are likely to continue.

Working knowledge of Hindi shall be a desirable qualification.

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association.*

Editor : ANJNI KUMAR

AIU meets at Coimbatore

The 52nd Annual Session of the Association of Indian Universities followed up the inspiring lead of the Union Finance Minister, Shri C. Subramaniam on the urgent and pointing theme 'Universities and the Rural Community'. At one Seminar it discussed the programme of integrated rural development and the role that the Universities would play in this regard under the leadership of the Agricultural University in each State. Several Vice-Chancellors reported on their experiences. Each one of them was emphatic on the point that wherever the University or a College adopted a village and worked according to an integrated plan had been salutary. The Seminar recommended that the experiences gathered in this behalf so far may be shared amongst Universities through direct exchanges and through the Association, so that Universities will have three functions : teaching, research and service to the Nation.

The work being done by the N.S.S. was widely welcomed and appreciated partly as an aspect of educational endeavour and partly as a contribution by the University and Colleges to the community. Papers on the working of the N.S.S. and the N.C.C. were presented by experts in the field. After a discussion lasting over 4 hours, the following decisions were taken.

(a) The relative role of the N. C. C., N. S. S. Sports and Cultural activities are matters which require to be discussed further and asked the Standing Committee to prepare a plan of action in this regard.

(b) It was felt that the allocation of resources by the Union Government for the different parts of the programme required to be reviewed and rationalised.

(c) In order to involve the teachers better in these programmes it was recommended that their expertise be developed with the help of University Grants Commission and the Union and State Governments.

(d) The proposal to develop academic and non-academic credits for these programmes was referred to the Standing Committee for further concentration.

It may be recalled that one day before the meeting of the Association the I.U.A.C.E. (Indian Universities Association for Continuing Education) had emphasised the great liberating role of non-formal education in involving the university in our rural society.

This is the first time that the Vice-Chancellors have met in an Agricultural University, where they saw for themselves in the University farms, laboratories and demonstration units, how the University can serve the humanity.

Dr. Shiv Mangal Singh 'Suman', Vice-Chancellor of Vikram University was elected the President. The next session of the Association would be hosted by Ranchi University at Jamshedpur in January 1978. ●

Students Evaluation

and

Internal Assessment

A. S. Kahlon*

In an attempt to overhaul the existing system of external examination, several educationists have recommended that an internal system of examination should partially replace the external system of examination. Experience shows that a fractional internal assessment along with external examination is not adequate and has not produced the desirable results. Here in the Punjab Agricultural University, we have completely replaced the external system of examination with an internal system of assessment. Since this experience has proved to be a great success, through this article I wish to share our experience with the rest of the educational world.

The organisational and educational theories tell us that a little bit of internal assessment which is tagged on to external assessment system in the traditional educational structure is neither here nor there. If this system tempts some teachers to put higher grading on internal assessment, we would not be greatly surprised. Its major component is practical work which has only a small weightage in the total system. But in all such institutions where a full blooded vigorous internal assessment system is working, a teacher knows that if he has all the power, he has all the responsibility too. Moreover, the system provides quite a few safeguards (discussed in a later section) which can build up the trust of the student in the system and keep it going.

It is recognised that evaluation of any system and particularly in the early stages of a programme, should form an integral part of any activity if it is to succeed. For each job there is a goal and in educa-

tion the goals are fixed on the basis of the needs of the society. Educational programmes and the associated evaluation system should, therefore, be so designed as to help the students reach these goals in the most efficient manner.

The success of any educational programme largely depends not only on the cultivation of faculties of a student for a professional career but also on preparing him for a useful role in the society through proper development of his total personality. This purpose is basic and any external examiner, who is not acquainted with the behaviour of a student both in the classroom and the laboratory, will always find it difficult to determine the extent to which these educational objectives have been served through an evaluation system.

Any restructuring of the system and instruments of examination should, therefore, have an orientation to the following fundamental principles.

- (a) A scientific system of examination should have the flexibility of the teacher being able to add the more recent development in his course outline as his own knowledge of the subject grows with experience which is possible only in the internal assessment system.
- (b) The evaluation system should build up trust in the mind of a student about the objectivity of the system not only in theory but in practice. All this can be best done if the concept of evaluation helps in using the examination as a means rather than as an end in itself. These objectives can be achieved through an internal system of students evaluation in the following ways.
 - (i) appraise the student's personality in order that the student can fully appreciate the needs of the society;
 - (ii) assist in the evaluation of personal characteristics in addition to those which are needed for success in a chosen field;
 - (iii) give an accurate comparison of an individual performance relative to that of others;
 - (iv) improve the basis of prediction of success in the educational, occupational and professional spheres;
 - (v) evaluate achievement of growth both for the individual and the group;
 - (vi) identify the student's capacity, his potentiality as well as his limitations.

The techniques employed for student's evaluation should achieve these objectives and build up the confidence in the mind of a student about the objectivity of the system. This is much more dependent upon the validity and reliability of the test based on the frequency of examinations and their spread over the unit of the course offered, the length

* Dean, PAU, Ludhiana

of the unit course and not just on whether the examiner is external or internal.

Safeguards in internal assessment

Theoretically, it would appear that an external examiner in traditional system would have more objectivity because he does not know any of the candidates. But just because the internal examiner knows his student, knows his performance in and out of the classroom, knows the subject matter that has been taught to the student, does not make him more subjective in his judgement. In fact, the system helps a teacher to make a correct assessment of the student's total personality, capability, capacity and performance.

In this system the teacher returns the graded script to all the student with his observations and positive suggestions on every question which helps each student to know not only why he got lower marks than the other but also make further improvement on his performance. In fact, the model answers to the questions are discussed in the classroom and the student knows why he lost marks on certain points. All this is assured through a system of safeguards which are kind of built-in stabilizers in the evaluation system. In case of any discrepancy of under marking or over marking, the students are free to bring this to the notice of the teacher concerned. In the traditional system of external examiner, no such communication between the teacher and the student was possible.

Again, in case of internal assessment, the grades earned by each student are discussed by the instructor with the Head of the Department and the Dean of the constituent colleges. This procedure minimises the chance of so called "a self certificate that under his wonderful teaching none need fail". The observations that in the internal assessment the students are awarded marks for extra academic considerations such as personal likes and dislikes, caste and community and payment of money for private tuition are not based on any empirical study. These are just hunches. On the other hand we have worked with the internal system for several years in the Punjab Agricultural University and have very rarely come across such abuses by the teachers. Once a teacher is trusted with full responsibility, he has discharged it with as much objectivity as any other system can claim. Exceptions may be there but they can occur in any system. There is however, a very little chance of a student getting extra academic consideration in the internal system where every student's capability and performance is known to his fellow students and the system operates like an open book.

Adequate preparation is necessary

Experience shows that most of the lapses occurred only in such situations where an institution had not

made adequate preparation before launching an internal assessment system. Around the year 1964 when the PAU made a switch over to the internal system as a necessary component of the trimester system, there were many teachers who were not exposed to this system. Recognising that adequate preparation was necessary for the success of any system, intensive training of the trimester and internal assessment systems was imparted to all such teachers who were not a product of this system. Such training programmes are repeated after suitable intervals, particularly to expose those members of the faculty to this system who have joined recently and who are new to the system.

Likewise, the students are exposed to internal assessment system when they join the college, which is followed up by continued guidance of the advisers in smaller groups of students. We would urge on every institution to go through such a process when it is planned to switch over to an internal system of examinations.

Letter grades

Every script is marked and each question or part of the question carries some definite marks. The grade is awarded on the basis of total marks obtained not just in one examination, but in all the examinations conducted for a unit of a course. Point estimates are not considered exact in any estimation techniques and should be discounted in any evaluation system. The cut off points used in awarding the letter grades are based on normal distribution which is rated much better method in scientific evaluations.

The main attack on the internal assessment system is that in this system the teacher has no fear for himself and he is a judge and jury of his own work. Also, the teacher may not finish the unit of the course in this system, because the assessment ultimately depends on him. This seems to be jaundiced view. Any one familiar with the system would know that on the very first day, when the class meets in this programme, the teacher distributes the cyclo-styled copies of the course outline dealing with the subject matter to be taught each week and the schedule of examinations is given for the whole trimester. In this process it would make it difficult for any teacher to leave his course unfinished. We would like to add that wherever such lapse occurred on the part of a teacher, the students did not hesitate to bring it to the notice of the Dean. I have no doubt in my mind that if the University Administration remains vigilant about these matters, such lapses will be very rare. Thus an over-view of the whole system would show that the grading and the evaluation techniques followed in case of internal assessment are in many ways superior to the traditional system and have proved to be a better instrument of education than can possibly be achieved through the external examination system. ☐

Students Participation in Varsity Governance in Australia

S. Santanagopalant

A university is described, very simply, as a society or association of men and women engaged in a common pursuit, namely learning in its widest sense. Students form an important factor in education, especially higher education. This has been fully recognised by the educational authorities in Australia and appreciated by the student community.

During my recent visit to universities in Australia, New Zealand, Malaysia and Singapore under the Commonwealth Universities Association Administrative Travel Fellowship, I found that students in Australian universities are given freedom of expression and representation on the various authorities, including the selection committee which is responsible for appointment of teachers. Students are allowed to manage the affairs of the students' union. The union organises a number of activities which aim at providing relaxation, entertainment and intellectual stimulus for the students. The students publish their own magazine in which they express their opinions freely and frankly on all matters affecting the welfare and progress of the student community in the university both academic and administrative.

The desirability of student membership on various academic bodies has been accepted in all the universities in Australia and New Zealand by the Deans and Heads of Departments. The Australians feel that "opportunity should be given for consultation between staff and students at the departmental level about the general range of topics of particular concern to students including curriculum, course requirements and planning, teaching methods, textbooks and term requirements".

Generally, it is noticed that in many countries some aspect of student activities leads to disruption to normal functioning in many universities. This has been avoided in Australian universities and this is largely due to the openness and flexibility shown by the university authorities in their response to new ideas and also to the restraint, generally shown by public authorities when they are involved. Actually real benefits have accrued from more active role of students in university decision-making.

In the University of New South Wales (Sydney), three members of the University Council, (which is similar to the Syndicate of our universities) are students and they are elected for a two-year term of office. Degree students in each faculty elect three representatives. In the University of Newcastle, there are student representations both on the council and the principal academic body. In the University of Adelaide, there are four student representatives elected by the under-graduates on the Council and student representatives are associated with almost every committee of the university.

A special feature of the Australian National University is that the Heads of Departments develop both formal and informal method of communications and contact between staff and students. Some of the departments have a Departmental Committee which include student members.

Similarly in the universities in New Zealand, there is full participation of students in the governance of the universities. In the University of Canterbury, the Council includes the President of the Students' Association. Even the academic body of the university, i.e., Professorial Board, which is charged with furthering and conducting the work of faculties and departments, have three student observers, who from 1973, have become full members.

There is a genuine view that the question of student participation in university administration should not be treated piecemeal. It is essential for students' opinion to be expressed and considered at all stages of the decision-making process. The university should be "not only a community in which the ability of administrative and academic staff is respected, but also a community in which the needs and aspiration of the students are communicated, understood and respected".

If decisions are made by committees with which students have little or no contact, it would create a sense of remoteness. Hence, it is believed that direct participation by students on such committees is necessary if genuine university community is to be fostered and strengthened.

The benefits of students' participation in university government are twofold : firstly, the students member on different bodies will assist these bodies in presenting the viewpoints of students on issues of direct relevance to their lives and careers; secondly, student membership on such bodies involves students in the responsibility for decisions taken.

Realising the importance of this question, some of the Indian universities have made a beginning by providing representation to students in some of the bodies of the universities. Some others have set up Students Advisory Committees and thus provide a forum for expression of students' opinion. It is stated that such a system functions well. Hence, it is for the other universities to take up this matter and make

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Faculty Status for Librarians

B. K. Kaul*

Man's first storehouse of knowledge was a verbal one. The long tales that were told around camp-fires became the *Iliad* and the *Odyssey*. Writing began with the hieroglyphs of the clay tablets of Babylonia and progressed through all the many stages of alphabets, languages and technology of today. With the ability to actually transcribe, the record could be kept with exactitude and preserved so that each new generation could begin far ahead of its parents in culture and technology. The library has been the instrument over the long period of recorded history to organise and make available this collective consciousness of mankind. It has adopted the role of cultural foreseer, looking into man's present and future and trying to make more visible and human the unknown and the fearful around us and ahead of us. Its job is to integrate a man with his present, thereby giving him a future, not to reconcile him with his past.

An academic library does not exist as an independent institution in itself. It derives its objectives from the institution of which it is a part. It becomes increasingly effective as teachers and students learn to use its resources and utilise its services. It stimulates, guides and encourages boys and girls in all phases of their reading to enable them to find increasing enjoyment and satisfaction, grow in critical judgement and appreciation. It provides an opportunity through its experiences for the pupils to develop helpful interests, make satisfactory personal adjustment and acquire desirable social attitudes.

A college or university library is mainly established to provide necessary library materials and services to support the teaching and research programmes of the institution, with leisure and recreation aspects of secondary importance. Theoretically, the students should be the principal beneficiaries. In practice, however, most libraries are more responsive to faculty and research staff needs than those of the students.

Independent study has always been the fundamental concept behind libraries, "the right book for the right reader at the right time", still sums up the best basis for developing library service. It too has stirred librarians to improve faculty book selection, and to seek short cuts to better acquisition, processing and circulation of materials.

With the passing of classroom as the centre of learning, the librarian can persist in his ancillary role

of retrieving books ever more vigorously and can assume his initiatory position in the learning process recognising that he is better equipped to guide the student to the self-education in the library than are most of his colleagues in the faculty. The librarian's better equipment for the learning process stems basically from his superior knowledge in knowing where to find it. The librarian is again better equipped than most of his teaching colleagues. Concern over increasing specialism has integrated areas in general education such as Humanities and Social Sciences, Natural Sciences, Physical Sciences etc. The extreme commitment of our faculties to predatory subject specialisation often confuses an undergraduate with the universe full of specialism but only in the library is the unity of knowledge restored.

All library services properly conducted and administered contribute to teaching. When a librarian assembles material for students use, directs a student to the best source of information on a subject, or instructs the student in the use of materials which will help him to help himself he is not 'merely a service officer without any independent intellectual function of significance, but one with definite and positive duties in the field of instruction'.

The librarian's role as teacher relates to the orientation to the library, instruction in skills and the use of materials, examination's help in independent study, introduction of materials of special interest and procedures for mass assignments. Emphasis on the importance of open-stack principle; library and reading studies to determine library efficiency; teaching effectiveness; student reading ability and interest; library guidance and counselling services and improving the ability of students to read intelligently are some of the chief teaching functions of the library. Besides, librarians have undertaken various publicity media to obliterate the general conception that 'he hands out the books at the counter only'. The librarians interpret the library services through personal contact between the groups they serve. They use the abstract, theoretical, philosophical level of skills for which they are professionally trained.

The library staff, whenever they aid a student in making use of library resources, or whenever they assist a faculty member in the compilation of a syllabus by suggesting bibliographical sources are serving as faculty, aiding in the transmission of knowledge and prodding young minds to evaluate resources and engage in cognition, they are faculty in the strict sense of the word.

There are growing number of outstanding professors; if given a chance, go into separate research institutes running parallel to universities, so that they could fully concentrate on their primary interests and not have to teach. If this becomes a trend, college and university students would have to depend

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Sport Medicine in Indian Sports

Physical Education and sports play a very important factor in the intellectual development, mental alertness, expression and creativeness, knowledge and understanding of sports and above all knowledge and respect for the body. The ancient educational system of India, based on the Yogic traditions, attached great importance to the simultaneous development of the body, the mind and the spirit. Physical Education also has its importance as a vehicle for transmitting social values of attitude and behaviour, cultural and emotional growth and recreation through movement. It also inculcates in young people the desire and the skills necessary for continued participation in sports, recreation and other physical activities. In recent times, physical education and sports have assumed significant importance in the context of life-long education, covering inter-connection of physical education and sports activities at different periods of life, in different situations and for the benefit of different age-groups.

The aims and objectives of both sport and physical education are identical. If at all there is any difference it is that compared with physical education, sport seems to place more stress to preparation for and participation in competition. In a limited number of cases, competition is a central—perhaps even the major—function of sport. In any case both physical education and sport have their own importance and are complimentary to each other. Sport is no longer a pastime and a privilege of the few. It should be the right of every citizen to participate in sport and physical education programme. Sport is a powerful tool for forging the team-spirit, helping to integrate the indi-

vidual into society and fostering the feeling of national identity enhanced by a legitimate pride in victories which reward concerted efforts and the costly sacrifices. There is however need to make physical education and sports programmes attractive, more so in the case of primary students. There is need to provide information to children about the essential functions that sport can perform in restoring the physical integrity of man, which is threatened or weakened by the conditions of contemporary life. There is also need to teach them how to appreciate the importance of the practice of sport as a factor contributing to self-fulfilment and enhancement of the quality of life. There is also need for a national-level enactment on the implementation of sport policy. The parents and teachers too can play a great role imparting proper motivation for sport and physical education.

In the present world, competitive sport has assumed a lot of significance. Even small countries have been able to put up their image effectively through sport. Often it has been seen that the National prestige is considered to be at stake when teams participate in international events to which their country attaches lot of importance.

Physical Educationists have to ensure that adequate time is devoted each week to physical education programme in primary, middle, high and higher secondary schools, colleges and universities. There has to be proper relationship between physical education and other subjects in college curricula. There is also need for equal opportunities in physical education both for boys and girls. There should be provision for awards and rewards to stimulate interest, participation and achieve-

vements in college-related sport. Subject teachers should willingly come forward to hold extra classes for students proficient in sports to make up the time lost by them in participating in the competitive sport. Physical Education and sport should also be a compulsory subject in schools and colleges but the compulsory programme should not be on paper alone but should be followed in actual practice. Teachers looking after the programme should have adequate knowledge of the subject. Sport schools and Sport colleges have recently come up at a few places and are giving good results. However, there is need to lay more stress on sports in these schools and less on academic side. Those on the rolls of these schools, who do not show good results in sport competitions at the end of the year, should be weeded out and sent to ordinary schools and their places given to others from outside who make achievements despite the fact that they were not fortunate enough to get admission to Sport schools or Sport colleges at the initial stage.

Trained personnel are very important in any field of life. So in physical education, there is need for specialised personnel to teach physical education. The status of physical education teachers vis-a-vis subject teachers has to be at par as recommended several years back by the Central Advisory Board of Physical Education and Recreation. The teaching staff of universities and colleges have been allowed U.G.C. scales of pay long back but unfortunately no decision has yet been taken about those looking after physical education programmes. For professional preparation physical education teachers training institutions should be strengthened and the quality of their product improved. The teacher-pupil ratio in the implementation of physical education programmes in educational institutions should be improved to 1:250.

India is a country of 600

million people and we have been asked so often why inspite of such a massive population we have not been able to make a grade in the field of competitive sports. The answer to this is quite simple. Population is not an asset. It is rather a liability. Our sportsmen and sportswomen are generally from the lower strata of the society and they suffer from mal-nutrition or under-nutrition. They do not have adequate sports facilities and coaching at the young age when they need them the most. Good diet during a couple of weeks at the National Coaching Camps is not going to do them much good. Rather at times it has an adverse effect. In spite of all these difficulties our men athletes have been able to secure first position in the Second Asian Athletic Championships held at Seoul in 1975 and 2nd position in the Asian Games at Tehran a year earlier. At the Montreal Olympics also, the four athletes included in the contingent put up a reasonably good show but that is not enough. If we have to make a grade and catch up with the developed countries, we have to provide infra-structure essential for our sportsmen. What a pity that tartan track was introduced in international sphere several years back but even till this day we don't have a single one in our country. The astro-turf was introduced for Montreal Olympics and our players suffered due to their less familiarity with that type of ground. We also do not have adequate electronic devices and sports equipment of requisite quality for various games and sports. India is exporting sports equipment in good quantity outside but for competitions at the highest level the best equipment is needed and it has to be procured from wherever available and at whatsoever cost.

The SNIPES Board under the Chairmanship of Shri Vidya Charan Shukla, Union Minister of Information and Broadcasting is busy preparing a plan for selecting about 4000

talented boys and girls in the age groups of 11 to 14, 14+ to 17 and 17+ to 21 and to provide them best of coaching apart from free nutritious diet, hostel accomodation, sports kit etc. The scheme will involve an expenditure of a few crores of rupees both recurring and non-recurring but it is hoped that given full support by the Centre and States Govts, it will be a success. The Govt of India is also seized of the question of making adequate preparations for the Asian Games 1982 which are to be held in India and for that a Project Committee has already been set up to work out details. Services of expert coaches, where necessary are being requisitioned from countries abroad and facilities are also being liberally afforded to our coaches to go abroad to have advanced studies. We had a very successful International Course on Track and Field at NIS, Patiala in March, 1976 in collaboration with the IOC Solidarity Committee and we are contemplating holding a few more International Courses in the course of next few months. We are also requisitioning the services of expert coaches from countries like USSR for longer duration to help conducting short courses for in-service coaches and preparing our National teams.

The NIS sucessfully organised an International Symposium on 'Physiology of Exercises' in collaboration with UNESCO about 2 years back. Research Fellowships have been awarded for the work in this field and the movement is catching up, though in a steady manner.

There is a universal advance in sporting standards and more than 60 International records were bettered in the Montreal Olympics. With the help of Sports Medicine the top athletes of today possess more muscular strength and cardiorespiratory capacity than their predecessors. Manipulated by biologists, chemists and computer specialists the

athlete of today is becoming a Robot machine. While selecting for their preparation for olympics and likewise international fixtures, the countries which are advance in Sports Medicine and Allied Subjects collect comprehensive information about the physiology and strength of the athletes, their past performance, mental attitude, even eating habits and feed all this data into a computer which helps the officials to decide the best chances some of them have in winning gold medals. The computers are also used in those countries to devise special training schedules to assist them in perfecting their techniques. The computers monitor the work-outs for a year or two as necessary and even indicate the particular muscle which requires treatment. Thus to turn out even one sprinter of world class there is a full team of scientists behind. On the contrary in India our athletes have practically no such support. Whatsoever position they have been attaining is more or less due to their sheer determination. Hari Chand though broke the National and the Asian records at Montreal Olympics in 10000M was running bare-footed being not used to run with the spikes. According to a study made by the Defence Institute of Physiology and Allied Sciences, our athletes have 25 to 35% less maximal aerobic power or in simple words their oxygen uptake is about 110 litres as against about 150 liters in top world athletes. Not only this the blood pumped by heart in case of Indian athletes is 24 litres per minute against 36 litres in case of World Champions. Systematic training round the year and proper guidance at the hands of Physical Educationists, Coaches and Sports Medicine Specialists at fairly young age is the only answer to these shortcomings.

Most of the Sports Medicine teachers in our country have only elementary knowledge in this science and they have yet to go a long way to understand pro-

perly the complicated requirements of athletes and to be of real help to them. For the development of Sports Medicine and Biomechanics, a lot of sophisticated and costly equipment is needed. There is need for paying due attention to this important aspect and set apart sizeable budget allotment to put up modern laboratories for research in this field so as to be of positive assistance to the field coaches and athletes. Doping in international competitions has been checked to a large extent due to control by the international bodies through sample checking of competitors. Still the abuse is there, though to a lesser extent, and the possibility of some of the top athletes, weightlifters, swimmers using one drug or the other which cannot easily be detected in checks cannot be completely ruled out. In India some of our top players have suffered due to lack of knowledge on the part of specialists in sport injuries. Charles and Micheal Kindo are two recent examples. They were put under the treatment of the Head of the Department of Orthopaedic Surgery in a State Hospital but still there were complaints. It is not that the Surgeons neglected the national players in any way; it may be that they are not very familiar with the type of injuries and their proper treatment. There is need for a Sports Medicine Department to be attached to each Medical College where ample facilities are available to the young Doctors who want to take to Sports Medicine as a career. There is enough scope in this field and as the games and sports receive more attention in our country, there will be side by side need for Sports Medicine Specialists. There should also be a Sports Medicine Centre attached to each of the sports complexes in State Capitals to begin with, where prompt attention is available to the sportmen and sportswomen practising there. The Sport Medicine research should also look after the nutri-

tion aspect of our sportsmen and that will eventually help in the growth of a healthier nation.

In the Montreal Olympics GDR a small country with a population of 17 millions only rose high to attain second position securing as many as 90 medals which included 40 gold. It will be of interest to note that in 1956 Olympics i.e. barely 20 years back, at Melbourne, GDR had secured only 7 medals. Behind their great and miraculous success lies the hard work of 8000 Sports Clubs, 3,00,000 Sports Officials, 1,91,000 Sports Instructors including Sports Medicine Specialists and 93,000 qualified Judge and Referees. The Olympics also brought to highlight the fact of imbalance between the developed and the developing nations on the one hand and between the socialist and non-socialist countries on the other. Significantly the 10 Socialist countries swept the field and won as many as 99 Gold, 104 Silver and 113 Bronze medals as against 99 Gold, 95 Silver and 103 Bronze medals won by the rest of the world. Amongst the remarkable individual achievements, to mention a few, a 14 years old girl from Romania, Nadia Comaneci, created a stir by securing 10 out of 10 points on 5 occasions in Gymnastics, Kornelia Ender a 17 year old girls of GDR mustered as many as 4 Gold medals and a silver in swimming. In athletics Lassen Viren of Finland, aged 27, created history by winning Gold medals both in 500M and 10000M after having done so much in Munich as well. One of the Cuban athlete, Alborto Juantorena won Gold medals in 400M and 800M, which was a rare feat.

In the words of the Prime Minister, Shrimati Indira Gandhi "Our young people, men and women, should not rest until they are able to compete with the best athletes of the World on level terms." This places heavy responsibility on all those connected with physical education and sport

in one way or the other. I cannot help but making a few suggestion for the early implementation of the Prime Minister's call.

These are :

- (1) Three main important bodies in the field of sport viz., the All India Council of Sports, The Society for the National Institutes of Physical Education and Sports and the Indian Olympic Association should have a coordinating body consisting of the three heads and this Committee should meet once a month to review the national policy.
2. There should be a separate Ministry for Sport and Physical Education at the Centre with its counterparts in States.
3. The national Sports Federations should, without any reservation, follow the guidelines issued by the Government of India which lays certain restrictions on holding multiple offices, the same offices for unduly long time, calling the annual general body meetings regularly and presenting before these meetings duly audited statements of accounts. They should also realise that their responsibility is not only to send teams aboard or to invite foreign teams but they have also to work at grass-root level to broad-base games and sports. The selections of teams which have to represent the country should be made on the advice of experts and not in a slipshod manner. The members of the Selection Committees owe a big responsibility and if they do not have ample time to watch the players in action, they should better resign and leave the field to others but equally competent who can easily be available. Parallel Federations are doing a great harm to the games concerned and some way has to be found to remedy this situation.
4. The All India Rural Sports Programmes have now an annual

- coverage of about 12 lakhs. This should be expanded further to fulfil the target laid down by the Union Education Minister, which is 1500 Rural Youth per block to which 1/3rd should be girls, with the total coverage of about 80 lakhs a year. The Nehru Yuvak Kendras and the Sports Clubs in rural areas being established should look after it
5. The Women's Sport has so far remained neglected in our country. There is need for the employment of more Women Physical Education Teachers and Women Coaches. The two National Sports Festivals for women recently held have succeeded in arousing sports consciousness amongst the women all over country.
 6. The Universities and Colleges should spare no efforts to implement Dr. Deshmukh's Committee Report on Physical Education & Sports. The U.G.C. should be liberal in granting financial assistance for improving physical facilities. The Sport Secretariat of the Association of Indian Universities should be strengthened to help in the organisation of All India Inter-University Meets, Coaching Camps etc. on better lines. Follow-up action on the talent spotted in the All India Meets is very important but requires a lot of work both in the field and in the office. Within a State, there should be Inter-University and Inter-Collegiate competitions more than once a year. Schools should have inter-School competitions at every week-end. Sports Fund should be used for the purpose for which it is intended.
 7. The number and the value of scholarships available under the Sports Talent Search Scholarship Scheme for University, College and School students should be substantially increased.
 8. In Junior Nationals or other meets boys and girls with correct age should only be entered. Here the officials responsible for selections should be honest to the task and do not permit any over age boy or girl to have access to the competitions not intended for them.
 9. The Public and Private Sector Section should be generous in offering suitable jobs to the outstanding sportsmen and sportswomen. After all they make a big sacrifice to strive for victories and deserve to be amply rewarded. There should be no restriction in giving them special leave and other facilities to train themselves round the year.
 10. There is a big dearth of literature including text books in the field of Physical Education and Sports. The Physical Education should fulfil the gap. The literature produced should be available in regional languages. Charts on physical exercises and techniques should be available at nominal cost.
 11. The Radio, TV and Press should help in popularising games and sports still further. They are already doing a good job but still there is scope for improvement.
 12. There should be a regular system to organise refresher courses for in-service Physical Education Teachers and Sports Coaches to bring upto date their knowledge from time to time. The standard of umpiring and refereeing in our country is poor and clinics with the help of experts from abroad, if necessary, should be held frequently.
 13. Physical Education Teachers should make use of every available opportunity to improve their Professional qualifications. Facilities should be available for their visits abroad for higher studies. Those showing excellent result should be provided due incentives through promotions, advance increments etc.
 14. It should be made incumbent on all Physical Education Teachers and Sport Coaches that they should be in proper kit while in the field.
 15. Some of our Physical Education Training Institutions are in bad shape. State Govts. concerned should give their attention to improve the existing position.
 16. Yoga, though becoming increasingly popular abroad is losing ground in its home country. There is need for a national Institute of Yoga. Yoga teachers going abroad should be well qualified in this important science.
- There is a challenge before the Physical Educationists and Sports Coaches and I have no doubt that they will rise to the occasion and before long we shall have a much healthier nation and top class athletes. Let us take a pledge at this seminar that we shall be honest to the noble profession in which we are all involved and will spare no efforts to propagate the programmes of physical education and work with full enthusiasm and dedication with children and young alike to the best of our ability.
- [Excerpts from the inaugural address of Mr. R. L. Anand, Director, NIS, Patiala delivered at the All India Seminar on Physical Education and Sports Medicine held at B.N. Chakravarty University, Kurukshetra.]*

Nag Chaudhuri addresses Kanpur Convocation

Dr. B.D. Nag Chaudhuri, Vice-Chancellor of Jawaharlal Nehru University, addressed the ninth convocation of Kanpur University. Dr. M.Chenna Reddy, Chancellor, presided.

Dr. Chaudhuri in his address said that the place of university has been central to any scheme of imparting education. It was equally central to the consideration of education as the instrument of reconciliation between change and harmony in a society. He felt that the subject of insecurity, tension and conflict regarding student's and teacher's problems should be studied and not avoided. These problems are due to disparities in our social system. We should therefore try to look into this subject of value more deeply.

The universities were the weakest link in the process of social continuity and between performance and rewards, which has given rise to other inconsistencies. Intellectual leadership of the university should have a meaning for the community so as to help in bringing about a successful process of social change and to be able to produce the desired effect. This can be done by a collective plan of action and a collective will of students and the faculty. He said that if a society evolves, it changes. If it changes, it lives. On the other hand, if a society remains where it is, it is stagnant. Such a society can die. He said that the students do not have a coherent scientific and technological outlook as was expected from them in a socialistic, scientific and technological society.

The Chancellor in his address said that drastic changes were needed in the educational system especially in the university education. He said that the education should be made more strong. The educational growth should be horizontal and not vertical so as

to better the standards of the students and teachers alike. He suggested that no further affiliation be given to the residential universities to improve the teaching standards. The universities should not be allowed to exist in isolation and the regional imbalances in universities should not be tolerated. He wanted the universities to have rapport with litterateurs especially from non-Hindi speaking areas.

Shri Bhakt Darshan, Vice-Chancellor of the university said that the university would soon establish a school of journalism and continuing education in the memory of Late Amar Shaheed Ganesh Shanker Vidyarthi.

Bardeen honoured by Delhi

The University of the Delhi held a special convocation to honour Prof. John Bardeen, a noted physicist and a noble laureate.

Prof. Bardeen is a Professor of Electrical Engineering and Physics in the University of Illinois, USA. His innovative and professional original researches on semiconductor led eventually to the invention of the transistor which has lent a new outlook to the subject and widened its horizons.

The Vice-President, Shri B.D. Jatti, Chancellor of the University, conferred the honorary degree of Doctor of Science (Honoris Causa) in recognition of his various contributions in the field of Physics.

Prof. Bardeen in his address called for cooperation among all nations for research to end the world's energy crisis. Science, he said, could still provide answers to many challenges faced by the

mankind.

Bengal VCs meet at Burdwan

The Committee of Vice-Chancellors of Universities of West Bengal met under the chairmanship of Dr. A.N. Bose in Burdwan. The meeting was attended by Dr. T.B. Mukherjee (Kalyani), Dr. Ramaranjan Mukherjee (Burdwan), Prof. Amlan Datta (North Bengal), Dr. P.C. Gupta (Rabindra Bharti), Dr. S.K. Mukherjee (Calcutta) and Dr. Kundu, Registrar of Kalyani Krishi Viswavidyalaya. The Problem of evolving uniform syllabi for the undergraduate pass courses in universities was discussed at length. It examined the different proposals and unanimously agreed that universities in consultation with their respective Board of Studies should formulate syllabi subjectwise. The University of Jadavpur would convene the conference of the heads of departments later and formulate the draft syllabi for the approval of the universities concerned. The committee also decided to refer the issue of introduction of new pay scales for non-teaching employees of the universities to the Education Department. It was decided to approach the State Government for the various problems concerning the admission and financial hardships experienced by private colleges following the abolition of pre-university course. It was noted that the enrolment in some colleges had suddenly come down due to this change over. With regard to the honours courses it was decided to collect information from other universities. The next meeting of the committee would be held at Rabindra Bharati University during February.

Modern farm technologies planned

A comprehensive programme for the transfer of technology for raising farm production and standard of living in rural areas has been drawn up by the Extension Department of Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur. Dr. D. K. Sharma, Director of Extension of the University said that sufficient technical know-how was available in the country to increase and improve the farmers' economic condition. The university programmes were chalked out with the basic objective to accelerate the process of adoption of modern farm technologies to achieve better yield. The programme worked out at Jabalpur provides for demonstration of new farm technology in selected villages, training of farmers, training of extension workers of the department of agriculture and veterinary science and animal husbandry,

also organising national demonstrations in the Rewa and Raipur districts on the farmers fields for taking three crops in a year with a minimum target of eleven tonnes of production per acre. Under this scheme about 1200 demonstrations had been conducted on the farmers' fields.

Along with green revolution the pace of white revolution should also be geared. The Directorate has also taken steps to popularise artificial insemination of local cows in the adjoining villages. A number of training programmes for the benefit of poultry and dairy farmers had also been organised.

Plant conservatory at Patiala

Mrs. I. K. Sandhu, Vice-Chancellor, Punjabi University, while inaugurating a three-day national symposium on recent researches in plant sciences in the Punjabi University emphasised the

in breeding better plants and animals for betterment of toiling Indian masses. The symposium was attended by eminent plant scientists from about thirty universities and institutions of higher learning in the country.

Adult education as a varsity discipline

Dr. Alan Rodgers of the University of Nottingham was the chief guest at the valedictory function of the training programme on 'Adult Education as a University Discipline'. He advised the educators not only to teach but encourage them to learn. He said that let them build their own curriculum. Let them prepare and give lessons. The job of the educators is to give them guidance and counselling and proper direction.

He said that the adult education students were likely to be older, richer and wiser than the teacher. This was one of the distinctive features of this education. They should consider themselves as learners and not as trained experts. There was no such thing as terminal education and education was transfer of knowledge and what they were creating was learning society where people learned together. They were in the business of continuing learning and they were learning as well. The training programme was sponsored by the University Grants Commission. It was attended by thirtyone participants from different universities of the country and from Malaysia as well.

UP to set up Educational Council

The Uttar Pradesh Government has decided to establish a State Council of Educational Research and Training on the pattern of the N.C.E.R.T. to tackle problems arising during the implementation of new pattern of education. The Council would take up responsibilities such as the development of curriculum

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setting up of farm information centres, education of men and women in rural areas, correspondence course for young farmers and mass communication of information. He said that the team of experts have already adopted five to six villages adjoining the campus of agricultural colleges in the State at Raipur, Rewa, Sehore, Gwalior, Indore, Mhow and Jabalpur where demonstrations on modern farm technologies were being conducted for the benefit of the farmers. The agricultural information centres are already in operation at Pantnagar. Similar centres were also being proposed to be set up in the adjoining villages of each of the ten research stations located in the State. This will ensure two way flow of information with the financial assistance of the Indian Council of Agricultural Research. The Extension Directorate was

necessity for research linked with rural development and improvement of socio-economic conditions of people living below the poverty line both in villages and cities. The Department of Botany has already started a project on the conservation of flora of Punjab and for this purpose the university has established a big plant conservatory on the campus. She also underlined the need for mass production of protein-lysing rich cereals and vegetables which could be made available in plenty as part of general diet of people. Referring to the contributions of plant sciences to the betterment of humanity she said that they had helped in the provision of adequate food mitigation of human sufferings through production of antibiotics and other chemical compounds and provision of clothing. She pleaded for utilisation of knowledge of genetics

and preparation of textbooks. It is hoped that from 1979 the new pattern of education would be implemented in the State. During 1977-78 about forty thousand teachers of the State would be trained in the new system. The training programme for them would be organised by this Council. The implementation of the new system is likely to cost an additional sum of Rupees ten crores. It is expected that the University Grants Commission in the next two years would provide a sum of Rs. 6.21 crores to encourage developmental activities in the State universities. Another sum of rupees five crores is expected to be sanctioned as non-recurring grant for the developmental activities of the State degree colleges.

Madurai plans for open varsity

The Open University programme of the Madurai University was inaugurated by Dr. Malcolm Adiseshiah, Vice-Chancellor of Madras University. The programme has incorporated the best features of the Open University and aims at providing university level education to all Indian citizens aged above twenty five years regardless of their status or previous academic qualification. The university proposes to design home experiment kits at a modest cost and these would be loaned to students who desire to do basic experiments at home. Local study centres would also be set up in the 100 affiliated colleges of the university to guide students in utilising the laboratories and library facilities when the colleges did not have regular session. The system is expected to come into force during 1977-78 academic session.

Dr Malcolm Adiseshiah said that this system would be a true learning experience to the scholars to have one's own path of learning suited to the aptitude of the learner. The programme would also help the scheduled castes, scheduled tribes, backward and

downtrodden sections of the society who had been kept out of the university so far.

Cells for rural development

The Indian Science Congress Association will soon set up cells of scientists in twenty backward districts to act as catalysts for rural development. This decision was taken at meeting of task force constituted by the association to take follow-up action on the recommendations of the 63rd Science Congress held at Waltair last year on integrated rural development.

Dr M.S. Swaminathan, President of the task force explained the follow-up action taken after scientists resolved to adopt certain districts to bring about integrated rural development. Dr. H. N. Sethna, President of the Congress said that scientists could only act as catalysts to teach villagers how to improve their living conditions by applying various modern scientific techniques. Once this was done, the villagers themselves would have to choose the kind of development they should undertake and implement various schemes accordingly.

The Government has already allotted Rupees fifteen crores in the last budget for development of the twenty backward districts. There had been a good response from various voluntary organisations and the Federation of Indian Chambers of Commerce and Industry to the proposal for undertaking village development.

Mass media to disseminate science information

While speaking at a seminar on science popularisation at the Indian Science Congress, Dr Y. Nayudamma, Director-General, Council of Scientific and Industrial Research, offered to institute a CSIR award for science journalists in India to encourage excellence in science reporting and writing. The Council would also be willing to award adequate

fellowship to train young journalists in various branches of science writing.

The seminar was organised by the Bharatiya Vigyan Patrika Samiti, Delhi, to focus attention on the need to disseminate science information to the rural areas. Dr. H.N. Sethna presided over the session. He emphasised the necessity for popularising science in villages. The best media for this purpose would be the television, radio broadcasting and films to make villagers grasp scientific techniques. These techniques should be demonstrated through the audio-visual media.

Dr. B.K. Nayar, President of the Bharatiya Vigyan Patrika Samiti said that organisation of science news service was essential to disseminate science information to the mass media. He suggested that some awards and fellowships be instituted for science journalists. He wanted more attention to be paid to the development of science writing in various regional languages.

Institute of Ecology

A multi-dimensional ecology institute is to be set up in Wankaner, about 45 km from Rajkot. The institute would be the first of its kind in the country and will make study and research in the various ecological aspects. Mr. Partap Singhji, former ruler of Wankaner, has decided to place the 'Amar Vilas' palace costing about Rs. 25 lakhs at the disposal of the institute. The national committee for environmental planning and coordination has accepted the proposal for setting up the institute and detailed schemes are being worked out in this direction. The desert area around the little Rann of Kutch has been the resort of the wild ass population. The two adjoining irrigation dams and the forest complex would provide different ecological region for extensive studies. The institute also proposes to conduct degree courses.

Saurashtra concession for blind students

The students passing the pre-university science examination of Saurashtra University will be eligible for admission to the pre-medical and first year engineering courses. Twenty per cent seats would be reserved for the scheduled castes and scheduled tribes students. The colleges and institutions affiliated to the Saurashtra University would not hereafter charge fee from blind students. Such students would be given half an hour extra time at their examinations. Deserving blind students would be considered for the post of lecturers after the completion of their training.

New syllabi in sociology

Prof. Yogendra Singh, convener of the University Grants Commission's panel on Sociology said in Visakhapatnam that a comprehensive and modern syllabi in sociology would soon be recommended which would be more field-oriented both in teaching and research and would look into the relevant Indian problems. The recommendations of the panel have been finalised on the basis of the four regional conferences held at Chandigarh, Poona, Ranchi and Visakhapatnam. After the approval of the Commission, the Chairmen of the Boards of Studies of the universities would be authorised to take consequential action.

Internal assessment for Jabalpur

The Jabalpur University has introduced internal assessment and grading system in postgraduate examinations commencing from 1977. A proposal for the introduction of question bank at the undergraduate level is also being studied by the sub-committee of the University Evaluation and Planning Board.

The university has provided facilities for tape-recording lectures in post graduate departments of Arts and Social Sciences to assist the students. Compensatory

coaching of scheduled castes and tribes students has also been introduced.

The University Grants Commission has provided adequate funds to the university for exploring the possibility of establishing the centre of study for regional development with special emphasis on rural development. The university has decided that departmental research wherever possible should be generally geared to the central theme of regional development with special emphasis on rural development. For this purpose ten junior fellowships have also been instituted.

Fee rise in Pune Varsity

Colleges affiliated to Pune University have been allowed to raise their tuition fees within limits from the next academic year. This provision has been made to enable them to tide over their financial stringencies. The university has one hundred and sixteen affiliated colleges out of which Colleges in Pune city have already effected the fee raise from the current academic year. The rise in the fee in colleges is likely to be from Rs. 100 to Rs. 150. The principals and heads of college managements in the Pune University at a meeting considered the problems of yearly deficits and the bank interest rates levied over the credits. The meeting urged upon the Government to institute cent percent grants against expenditure and to include in the later category many other essential expenses which are not being included so far. A deputation of the managements of colleges will soon meet the State Government authorities to put various alternative proposals for grants-in-aid.

Hooker Award jointly shared

The Hooker Award for 1974-75 for outstanding research work is shared by three scientists - Dr. Rajendra Prasad, Professor of Agronomy, IARI, Dr. K. N.

Saxena, Professor of Zoology, University of Delhi and Mr. B. S. Ramappa, Chief Scientific Officer and Head of Poultry Science, UAS, Bangalore.

Dr. Prasad had carried out experiments to study the relative efficiency of nitrogen carriers for a number of crops like wheat, rice, maize. His researches on rice are stated to be particularly useful to the kharif rice areas of Punjab, Haryana, Eastern U.P. and Madhya Pradesh and the rabi rice regions of West Bengal, Andhra Pradesh, Tamil Nadu and Kerala.

Prof. Saxena did useful research on the physiological basis of insect-plant relationship and its manipulation for pest control.

Mr. Ramappa developed three broiler strains which the ICAR had recommended for use as foundation stock for the breeding programme of the all-India coordinating project on poultry.

The award instituted by the Academic Council of IARI out of the legacy of \$ 5000 left by a US journalist, Mr. Richard Hooker, and his wife, is for outstanding research in agriculture leading to increase in food production.

New campus for GAU

The Gujarat Agricultural University will soon shift its headquarters to Dandiwada in Sabarkanta district. The university had already opened one of its principal campuses there.

The campus at Dandiwada has an ambitious programme for farm research for arid regions. Some faculties are already working there. A centre for research into the problems of arid and semi arid areas, a livestock research station and a centre for agricultural education and research and a krishi vigyan kendra will start functioning in Dandiwada before the commencement of the next academic session.

Solar energy laboratory

The Nagarjuna University will set up a laboratory to tap

solar energy for human use. The university would also provide facilities to make researches into utilisation of agricultural wastes taking into account the needs of Vijayawada and Guntur areas which are predominantly agricultural. Vice-chancellor, Dr. V. Balaiah assured that the university would not subscribe to a particular religion or an ideology but try to promote views backed by rational thinking.

MTech course in Environmental Engg.

The Andhra Pradesh Productivity Council will start M. Tech course in Environmental Engineering at the Jawaharlal Nehru Technological University, Hyderabad, from the coming academic session.

UGC advisory panels

The University Grants Commission has decided to set up expert committees in the fields of

science and humanities. These committees will advise the various universities and their departments which are introducing the M.Phil programme about basic physical facilities and expertise available to them.

Iqbal Chair

To commemorate the memory of Dr. Sir Mohammad Iqbal, the great urdu poet and philosopher and with a view to promoting research on Iqbaliyat, the University of Kashmir has created a chair named after him to promote research on his life and philosophy.

Prof. A'le Ahmad Saroor, a noted literary critic and urdu poet has been appointed to hold this Chair. Prof. Saroor will take up this assignment in the first week of March, 1977.

Novel orientation course

The Saurashtra University conducted special orientation

course for about five hundred students appearing in the various university examinations. They were provided with specialised guidance from the faculty members to help them. This venture is the first of its kind in Gujarat State.

Bombay sets up Health Services Department

The University of Bombay has decided to set up a Department of Health Services which would carry out research on the different aspects of health services and other allied subjects. The new department would work in collaboration with the Department of Social Sciences and the medical colleges affiliated to the university. Prof. T. K. Tope, Vice-Chancellor has suggested that the Municipal Corporation and the State Government should take active measures to check the pollution in the State which has been a serious health hazard.

Students Participation in University Governance

(Contd. from page 58)

provisions in their act and statutes to give representation to the students in the governance of the universities.

The report of the Committee on "Governance of Universities" published by the University Grants Commission in 1971 has expressed the view that there should be greater participation of students in the affairs of universities and colleges, and that the contribution of students in determining the shape and pattern of academic life can be substantial. It is felt desirable and necessary to promote and strengthen students' participation in the administrative and academic affairs of the university. Partnership of students on various university bodies is a new concept and involves no doubt, a radical departure in the traditional philosophy of university governance.

On analysing the pros and cons of the whole problem of student participation, a view was expressed that it would not be desirable to give students any representation on the Syndicate, nor any useful purpose would be served by giving representation to the students on the Academic Council. But instead, a Students Council could be set up and they could make recommendations to the Syndicate and then, in turn to the Academic Council. It was again pointed out that it is not desirable to give representation to the students on the Faculties or the Boards of Studies. However, it was recommended that there

Faculty Status for Librarians

(Contd. from page 59)

upon the expertise of the library staff for academic guidance.

Thus, precisely, the academic librarian is the ultimate in scholarship and is the only unfettered clear voice of the aspiration of the academic community, for he is un-encumbered with the responsibility, in most instances, of meeting a class. The entire student body is his class. He is the colleague of all faculty members, for he works in an interdisciplinary mode, bringing all knowledge together, in a variety of formats in the library. If such is the case then why not to consider, like their colleagues in the classroom, college and university librarians as an integral part of the faculty? Why not allow librarians to exercise effective control over the selection, retention and promotion of their members? Why should not they be permitted self-determination on the job, draw up their work schedules and engage in evaluation of students performance? Why not to concede their demand of academic work year, the comparable salaries with the faculty, vacations, faculty title and in a nutshell the entire faculty status package? ☐

may be a Joint-Teacher-Students-Committee in each faculty so that students may express their views on any important academic question.

It is hoped that Indian universities may evolve a workable scheme for students' participation, based on the situation in the particular region and in the university. ☐

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Gupta, Bal Chand. Operators of class m and k -quasi-hyponormal operators. Sardar Patel University.
2. Jain, S. K. Stability of certain magnetohydrodynamic flows. I. I. T., Bombay.
3. Kandaswamy, P. Internal gravity waves in compressible fluids. Bangalore University.
4. Pan, Umesh Chandra. On some problems of elastodynamics including the study of effects of inhomogeneity and initial stresses. University of Burdwan.
5. Pateriya, Mathura Prasad. Application of transform calculus to the problems of engineering and science. Ravishankar University.
6. Verma, Kamlesh. Analytical studies of some lubrication problems. Kanpur University.

Statistics

1. Das, S. Combinatorial programming. Dibrugarh University.
2. Srivastava, G. L. Some mathematical models in theory of reliability. Dibrugarh University.
3. Sundara Raja, J. Characterisation of multivariate distributions. University of Kerala.
4. Virk, Manjit Singh. Contributions to the construction and analysis of confounded factorial and breeding experiments. Punjab Agricultural University.

Physics

1. Daryan, Rajbir Singh. Effect of solid dilution on the crystal field spectra of cobalt and nickel double sulphates single crystals. IIT., Delhi.
2. Dasgupta, Anilranjan. Studies on the Orientation in cornuaba wax thermoelectrets. University of Calcutta.
3. Dhar A. K. Deformed configuration mixing shell model studies of the f - p shell nuclei. Gujarat University.
4. George, Varghese. Growth and properties of the sulphides of zinc and antimony. Sardar Patel University.
5. Goel, Chandra Mohan. Study of optical and other properties of solids by lattice dynamics. Meerut University.
6. Gupta, Anjana. Propagation of optical beams through graded-index media. IIT., Delhi.
7. Gujdar, P. N. Parametrically induced stability and instability in plasmas. Gujarat University.
8. Iyer, K. N. Studies of geomagnetism and ionosphere at low latitudes. Gujarat University.
9. Jagannadha Swami, S. T. P. V. Incoherent scattering of gamma rays by bound electrons. Osmania University.
10. Jain, Rajendra Kumar. Study of the I -emission spectra of some rare earth elements. Vikram University.
11. Kanhere, D. G. A band structure calculation of electron momentum distributions in some transition metals. IIT., Kanpur.
12. Karunakaran Nair, P. Studies on the dielectric and electronic processes in polymers with special reference to polyvinylcinnamate and polyvinyl carbazole. I. I. T., Delhi.
13. Karunanidhi, N. Kinetic constant in molecular dynamics. University of Madras.
14. Mallik, Prabal Kumar. Electronic spectra of organic molecules. University of Calcutta.
15. Seshi Reddy, Talla. Spectrum shape measurements of some non-unique first forbidden beta transitions. Andhra University.
16. Sharma, A. S. Nonlinear dispersive waves and modulational instabilities in plasmas. Gujarat University.
17. Siva Kumar, K. V. Ultrasonic studies in liquids and solutions. Sri Venkateswara University.

18. Suresh Chandra. Study of various empirical and semi-empirical approaches in calculations of inelastic scattering crosssections. Meerut University.

19. Thakoor, Anilkumar Prabhakar. Disorder effects on thermopower of copper alloy films. I. I. T., Delhi.

Chemistry

1. Ananta Raman, Veluri. Studies on some substitution reactions of chromium (III). Andhra University.
2. Bhatnagar, Ajay Kumar. Studies on long chain acid esters as lubricants. Meerut University.
3. Bhatnagar, I. K. Studies on vanadium pentoxide catalysts. I. I. T., Bombay.
4. Bhattacharya, Saurindramohan. Physico chemical studies in metal complex formation. University of Calcutta.
5. Biswas, Mukul. Studies on vinyl polymerization. University of Calcutta.
6. Chalapati Rao, C. V. Formation and reactivity of heterocyclic ring systems containing nitrogen: Synthesis of benzimidazoles and quinazolones by condensation and pyrolytic reactions. Osmania University.
7. Channabasavaiah, K. Synthesis of peptides of biological interest. Bangalore University.
8. Desai, P. B. Studies in fluoropyridines. I. I. T., Bombay.
9. Dhandhukia, M. M. Separation of constituents of seabrine evaporites by physical methods and study on the minor constituents of seabrine such as boron and iodine. Gujarat University.
10. Dhawan, Rita. Studies on nitration of protolignin and isolated lignins of bamboo, *Dendrocalamus Strictus*. Meerut University.
11. Garg, Rashmi. Effect of metallic intrauterine contraceptive device on the chemical composition of female genital tract tissues. Kanpur University.
12. Geetha, C. K. Preparation and properties of aliphatic aromatic poly 1, 3, 4-oxadiazoles. I. I. T., Delhi.
13. Hegde, M. S. Population densities of He I and He II excited states in non LTE helium plasmas. I. I. T., Kanpur.
14. Kalla, A.K. Chemical investigation of iris and datura species and synthesis of some possible estrogenic compounds from the plant sources. University of Kashmir.
15. Keemti Lal. Studies on the chemistry of transition metal complexes of 3, 5-dichloro-2-hydroxyacetophenone and its oxime. Meerut University.
16. Krupadanam, G.L. David. Chemical investigation of indigenous medicinal plants and related synthesis. Osmania University.
17. Mahapatra, Surendra Nath. Mechanism of redox reactions. Berhampur University.
18. Mandal, Sanat Kumar. Uses of some beta-Ketoanilides as reagents in inorganic analysis. University of Burdwan.
19. Mankodi, U.H. Studies in chemical senses: Taste and odor including deodorisation of gases. Gujarat University.
20. Mayanna, S.M. Effect of halide ions and benzotriazole on the kinetics of dissolution of copper single crystals. Bangalore University.
21. Mehra, Promilla. Chemical studies on effect of various microorganisms on the major chemical constituents of eucalyptus hybrid. Meerut University.
22. Mitra, Rita. Studies on triglyceride fatty acids from a fresh water fish, *Puntius Sarana*: Isolation, characterisation and their variation with size. I.I.T., Delhi.
23. Naik, N.D. Studies in complexes of ketoximes and their analytical applications. South Gujarat University.
24. Parthasarathy, N. Studies on the carbohydrate containing proteins of skin, plant and other sources. University of Madras.

25. Patel, S.B. Synthesis of physiologically active and optically active compounds. Gujarat University.
26. Raghupati Rao, Kongat. Reactive intermediates involving dimethylformamide. Vikram University.
27. Ramdas, P.K. Photochemistry of some nitro arenes. University of Kerala.
28. Ramesh, Ravi. Studies on trimethyl cellulose and cellulose. Sardar Patel University.
29. Rawal, Jagdish Chandra. Studies on the kinetics and mechanism of oxidation of the lignin, holocellulose and pulp from eucalyptus hybrid. Meerut University.
30. Sanghvi, Kailash Parimal. Studies in the synthesis of furano compounds. M.S. University of Baroda.
31. Sharma, Raj Kumar. Physico-chemical studies on the interaction of lawsone (2-hydroxy-4-naphthoquinone) with metal ions (Cu(II), Zn(II), Ca(II), Mn(II), Cd(II), and Fe(III)) Meerut University.
32. Thiruvengadam, T.K. Synthetic experiments in furothieno and pyrrolo-(2-3-b) quinolines. University of Madras.
33. Virender Singh. Studies on lead tetraacetate oxidation of organic compounds. Vikram University.

Earth Sciences

1. Krishnarjun Rao, Koka. Petrological study of lava flows and associated dykes around Bakaner, Dhar District. M.P. (India) Vikram University.

Engineering & Technology

1. Arora, K. Optimization of clutter rejection in MTI radar systems. I.I.T., Delhi.
2. Chennakesavulu, N. Petrochemistry and mafic mineralogy of Amjori Sill, Simlipal Complex, Orissa, I.I.T., Bombay.
3. Doraipandy, Sevaithia. A solid state controller for slip ring induction motors. I.I.T., Delhi.
4. Dubey, R.K. Studies on Mussoorie phosphorites and associated rocks in the lesser Himalayas. I.I.T., Bombay.
5. Goyal, H.B. Vapour phase acetylation of acetic acid to vinylacetate. I.I.T., Kanpur.
6. Jayaswal, B.K. Studies in the production of keten from acetone pyrolysis. I.I.T., Bombay.
7. Marwah, B.R. Studies in stochastic modelling and simulation of mixed vehicular traffic. I.I.T., Kanpur.
8. Pal, Ajit. Studies on the synthesis of district logic circuits using threshold gates and MOS networks. University of Calcutta.
9. Rajendra Kumar. Breakdown and capacitance properties of some two terminal silicon epitaxial device structures. I.I.T., Delhi.
10. Salhotra, Kuldip Raj. Studies on the tuft breakage process in the blow room. I.I.T., Delhi.
11. Srinivasan, R. Quantitative studies in photostability of dyes and fibres. I.I.T., Delhi.
12. Tangnu, Krishen. Kinetic studies on microbial conversion of naphthalene to salicylic acid. I.I.T., Delhi.

Additions to A.I.U. Library

December 1976

- Altbach, Philip G. and Kelly, David H. *Higher education in developing nations: A selected bibliography, 1969-1974*. New York, Praeger, 1975. ix, 229 p.
- Archer, Margaret Scotford, ed. *Students, universities and society*. London, Heinemann (c 1972) viii, 280 p.
- Atal, Yogesh. *Social sciences: The Indian scene*. Delhi Abhinav, 1976 xi, 281 p.
- Barkan, Joel D. *African dilemma: University students, development and politics in Ghana, Tanzania and Uganda*. Nairobi Oxford University Press (c 1975) xvii, 259 p.
- Barrow, Robin. *Plato and education*. London, Routledge and Kegan Paul, 1976, x, 83 p.
- Biswas, A. and Aggarwal, J. C. *10+2+3 pattern, philosophy programme: Modern development in Indian education*. Delhi, Academic, 1974. 95 p.
- Cooley, William W. and Lohnes, Paul R. *Evaluation research in education*. New York, Wiley, 1976. xi, 368 p.
- Dietze, Gottfried. *Youth, university, and democracy*. Baltimore Hopkins (c 1970) 117 p.
- Evans, Lionel and Leedham, John, ed. *Aspects of educational, technology. V9. Educational technology for continuous education*. London, Kogan Page, 1975. 308 p.
- Hall, David. *Geography and the geography teacher*. London, Allen and Unwin, 1976. 318 p.
- Hanson, David J. *Lowered age of majority: Its impact on higher education*. Washington, Association of American Colleges, 1975. 46 p.
- Hanson, Derek and Herington, Margaret. *From college to classroom: The probationary year*. London, Routledge and Kegan Paul, 1976. viii, 93 p.
- India. Committee on Unemployment, 1973. *Report*. Delhi Ministry of Labour and Rehabilitation, 1974. viii, 410 p.
- Institute of Applied Manpower Research, Delhi. *Engineering Manpower: Educational and training preparation of technicians-a memorandum*. Delhi, Author, 1967. iv, 73 p.

- Guide to educational and training statistics*. Delhi, Author 1970. viii, 87 p.
- Wastage in Indian school education: A review and further analysis*. Delhi Author, 1972. 32 p.
- International Labour Office, Geneva. *Role of universities in workers education: Report of a symposium*. Geneva Author, 1974. 216 p.
- Lawler, Edward E. *Motivation in work organization*. California Brooks-Cole (c 1973) vii, 224 p.
- Lessinger, Leon and others *Accountability: Systems planning in education*. Illinois, ETC (c 1973) xiii, 242 p.
- Matejko, Alexander J. *Overcoming alienation in work*. Meerut, Sadhna, 1976. viii, 340 p.
- Narindar Singh. *Economics and the crisis of ecology*. Delhi, Oxford University Press, 1976. xii, 154 p.
- Nash Roy. *Teacher expectations and pupil learning*. London, Routledge and Kegan Paul, 1976 viii, 89 p.
- Parekh, Satish B. *Long range planning model for colleges and universities*. New York, Phelps-Stokes Fund, 1975. 44 p.
- Paris, O.E.C.D. *Reviews of national science policy: Ireland*. Paris, Author (c 1974) 130 p.
- Peters, R. S., ed. *Role of the head*. London, Routledge and Kegan Paul, 1976. vii, 136 p.
- Pincoffs, Edmund L., ed. *Concept of academic freedom*. London University of Texas Press (c 1975) xxiv, 272 p.
- Ross, Murray G. *University: The anatomy of academe*. New York, McGraw-Hill (c 1976) xii, 310 p.
- Sen, Sudhir. *Reaping the green revolution: Food and jobs for all*. Delhi, Tata McGraw-Hill, 1976. xx, 397 p.
- Turner, John D. and Rushton, J., ed. *Teacher in a changing society*. Manchester, Manchester University Press (c 1974) 98 p.
- Van Zeyl, Cornelis J. *Ambition and social structure*. Lexington, Heath (c 1974) 240 p.

UNIVERSITY OF DELHI
Advt. No. Estab. IV/39/77

Applications on the prescribed form are invited for the following posts :

9. Professional Seniors	Rs. 700-50-1250.	} likely to be revised
10. Professional Juniors	Rs. 400-40-800-50-950.	

S. No.	Department	Designation & Areas of Specialization
1.	Philosophy	One Professor in Nyaya/Mimamsa or Analytical Philosophy or Phenomenology.
2.	Mathematics	i. One Professor
3.	Operational Research	ii. One Reader in Abstract Algebra.
		i. One Reader
		ii. One Reader in Theory of Queues and Storage System.
4.	Economics	iii. One Lecturer (Temporary upto 17. 8. 1978)
		One Professor in Economic Theory/Industrial Economics.
5.	Physics & Astrophysics	i. One Professor (Centre of Advanced Studies)
		ii. Readers(one permanent & others temporary)
		iii. Four Research Associates (Centre of Advanced Studies)
		iv. One Technical Assistant (Temporary but likely to continue).
		v. One Junior Laboratory Assistant
		vi. Two Instrument Mechanics (One temporary but likely to continue and another purely temporary).
6.	Chemistry	i. Two Professors (Centre of Advanced Studies)
		ii. Three Readers (Two for Centre of Advanced Studies)
		iii. One Technical Assistant (Temporary but likely to continue).
7.	Arabic & Persian	One Reader in Modern Arabic
8.	Library Science	One Reader
9.	Faculty of Law : Evening Law Centre No. 1	One Part-time Lecturer
10.	Delhi University Library System	i. Professional Seniors
11.	Modern European Languages	ii. Professional Juniors
12.	Modern Indian Languages	One Assistant
		One Lecturer in Manipuri

The Scales of pay of the posts are :

1. Professor	: Rs. 1500-60-1800-100-2000-125/2-2500.
2. Reader	: Rs. 1200-50-1300-60-1900.
3. Lecturer	: Rs. 700-40-1100-50-1600.
4. Research Associate	: Rs. 700-40-900-EB-40-1100-50-1300.
5. Part-time Lecturer	: Rs. 500/-p.m. (fixed) for work load ranging from 3-6 hours per week. Rs. 750/-p.m(fixed) for work load Ranging from 7-10 hours per week.
6. Technical Assistant	: Rs. 425-15-500-EB-15-560-20-700.
7. Jr. Lab. Assistant	: 260-8-340-EB-10-380-EB-10-430.
8. Instrument Mechanics	: Rs. 425-15-560-EB-20-640.

11. Assistant : Rs. 330-10-380-EB-12-500-15-560.

All posts carry D. A., C C. A. and H.R.A. as admissible under the rules in force in the University from time to time.

I ESSENTIAL QUALIFICATIONS FOR :

1. Professorships :

A Scholar of eminence.

Independent published work of high standard and experience of teaching Post-graduate classes and guiding research for a considerable period desirable.

2. Readerships :

Good academic record with First or High Second Class Master's Degree in the subject concerned with a Doctor's Degree or equivalent published work.

Independent published work (in addition to the published work mentioned above) with atleast 5 year's teaching experience in Honours/Post-graduate classes essential.

3. Lectureships :

Consistently good academic record with a First or High Second Class (B+) Master's Degree or an equivalent degree of a foreign University in the subject concerned.

Desirable (in order of preference) :—

i. A Doctor's Degree/or Evidence of research work of equivalent standard in the subject concerned.

ii. Teaching experience of Degree/Post-graduate Classes.

Provided that if a teacher is not a Ph. D. at the time of his/her appointment and does not qualify himself/herself for the award of Ph. D. Degree from a recognised University in the subject which is being taught by him/her within the period of five years from the date of his/her appointment or does not give evidence of research work of equal standard within that period in the subject concerned, he/she shall not be entitled to any future increments after the expiry of the said period of five years till such time he/she fulfils the above mentioned requirements.

4. Part-time Lecturer in Law :

Good academic record with First or High School Class Bachelor's or Master's Degree in law, practice at the Bar for at least 5 years of which at least 3 years should have been in the Trial Courts.

Previous teaching experience desirable but not essential.

5. Research Associates :

Consistently Good academic record with First or High Second Class (B+) Master's Degree or an equivalent degree of a foreign University in Physics.

Note :—Initial appointment will be for a tenure period of three years extendable by another two years only. In no case the tenure will extend beyond 5 years in all.

6. Technical Assistants :

Graduate in Science. Experience in Laboratory Techniques of the subject.

7. Junior Laboratory Assistant :

Matric or equivalent Examination with Science subjects.

8. Instrument Mechanics :

Must be thoroughly conversant with all types of lathe work facing, surfacing, turning, multiple screw cutting (including various forms of screw threads), tape and curved turning, etc. Should be able to work on other workshops machines like

shaper, milling and drilling, etc.
Ability to repair laboratory instruments like Galvanometers Stop Clocks and Watches desirable.

9. Professional Seniors :

- (A) 1. First or High Second Class B. A./B.Sc./B.Com. and First or High Second Class M.Lib.Sc.;

OR

2. First or High Second Class M.A./M.Sc./M.Com. and First or High Second Class B. Lib. Sc.;

OR

First or High Second Class Post-graduate Diploma Course;

- (B) Active interest in academic and research work supported by papers or projects of merit.

- (C) At least 5 years' experience as Librarian or of working in a responsible capacity in an academic library where he has proved his initiative in organisational & administrative ability.

10. Professional Juniors :

First or Second Class B.A./B.Sc./B.Com. *plus* First or Second Class M.Lib. Sc. Degree;

OR

First or Second Class M.A./M.Sc./M.Com. Degree and First or Second Class B. Lib. Sc. or Post-graduate Diploma in Library Science.

11. Assistant in Modern European Languages Department :

- Bachelor's Degree from a recognised University;
- Advance Diploma in Russian with Distinction;
- Good knowledge of Russian typing;
- Some experience of office work pertaining to Russian Language as well.

Note :— The candidates will be required to qualify in the prescribed tests.

II. SPECIAL/DESIRABLE QUALIFICATIONS FOR :

1. Professorship in Philosophy :

- For those who have specialized in Nyaya/Mimamsa; Sound knowledge of original Sanskrit texts and good grounding in modern logic.
- For those who have specialized in Analytical Philosophy; good knowledge of Symbolic/Indian logic.
- For those who have specialized in phenomenology; Sound knowledge of original works and good grounding in analytical philosophy/modern logic.

2. Professorship in Mathematics :

Specialization in Combinatorial

Mathematics will be preferred.

3. **Readership in Library Science :**
Experience in a responsible Professional Capacity in addition to the five years teaching experience.

4. Professional Juniors :

- Candidates possessing High Second Class with 55% of marks and above will be preferred.
- Ph.D. in Physics, Chemistry, Mathematics, Zoology or Botany would be an additional desirable qualifications.

The prescribed application form can be had from the **Information Office** of the University either personally or by sending a self-addressed envelope (5"X 11") with postage stamps worth Rs. 2.55.

Selected candidates will have to produce the original documents relating to their age, qualifications, experience, etc. at the time of interview.

Application (Separate for each post) accompanied by attested copies of Degrees, other certificates, mark-sheets, published research articles, etc. should reach the undersigned not later than **7th FEBRUARY 1977.**

- Note :** 1. It will be open to the University to consider the names of suitable candidates who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all posts on the recommendations of the Selection Committee.
- Canvassing in any form by or on behalf of the candidates will disqualify.
 - Candidates from outside Delhi for Teaching posts, called for interview, will be paid contribution towards travel expenses equivalent to 1½ single Second Class Rail fare.
 - Certain percentage of posts in the cadres of Non-teaching, are reserved for Scheduled Castes.

sd/-

Registrar

University of Delhi
Delhi-110007

**BIDHAN CHANDRA KRISHI
VISWA VIDYALAYA, MOHANPUR
WEST BENGAL**

Advertisement No. Rect. /1/77

Applications in prescribed forms with the following qualifications are invited for the post of

**DEAN,
FACULTY OF VETERINARY &
ANIMAL SCIENCES**

In the scale of Rs. 1500-60-1800-100-2000-125/2-2500/-plus Rs. 250/- as Special Allowance with the benefit of C. P. F. and other allowances as admissible under Viswa Vidyalaya rules :

QUALIFICATIONS

- Essential :** (i) Doctorate in Veterinary/Animal Sciences/Dairy Sciences or in any of the Sciences basic to these or published work of an equally high standard;
- (ii) Consistently good academic record with 1st or high 2nd class (B+) Master's degree in relevant subject as in (i) above or an equivalent degree of a foreign University;
- (iii) Ten years experience in Teaching/Research in any of the fields indicated in (i) above;
- (iv) Ability to organise and administer under-graduate and postgraduate programmes of study.

Age : Preferably below 50 years.

Experience and age limit may be relaxed on the recommendation of the Selection Committee in the case of a candidate otherwise well qualified. A high initial pay in the scale may be granted on the basis of qualifications, experience and present emoluments.

Selection will not necessarily be confined to those who will apply formally.

Applications must be submitted in the prescribed form which may be obtained from the **OFFICE OF THE REGISTRAR, BIDHAN CHANDRA KRISHI VISWA VIDYALAYA, P. O. MOHANPUR, DIST. NADIA, WEST BENGAL** personally or by sending self addressed stamped (0.25) paise envelope (25 CMX12 CM) **ON PAYMENT OF RUPEES EIGHT (Rs. 8.00) only** for the posts **BY CROSSED INDIAN POSTAL ORDER** in favour of the **BIDHAN CHANDRA KRISHI VISWA VIDYALAYA**. Persons already in employment should apply through proper - Channel. Candidates may also apply on plain paper with necessary Postal Order. Applications, completed in all respect should be submitted in an envelope superscribed with the name of the post and must reach the **OFFICE OF THE REGISTRAR BY THE 15th February, 1977.**

Candidates may be called for interview, if necessary. In that case, they will have to appear for the same at their own cost.

REGISTRAR

UNIVERSITY OF INDORE, INDORE
University House,
Indore-452001.

No. Esst./III(1)/77. Dated 14th Jan. 1977

Advertisement

Applications on the prescribed form obtainable from the University office on payment of Rs. 3/- (in the shape of Crossed Indian Postal Order), are invited for the post of Professor of Economics in the scale of Rs. 1100—50—

1300—60—1600/- (Likely to be revised) with D.A. & C.P.F. benefits as per the University Rules. A higher start can be given to deserving candidate.

2. Qualifications :—

- (i) A first or second class Master's degree of an Indian University or an equivalent qualification of a foreign University in the subject concerned.
- (ii) Either a degree of the doctorate standard or published work of high standard.
- (iii) Not less than 10 years experience of Post-graduate teaching & experience of successfully guiding research.
- (iv) Should have specialisation in Econometrics or should possess adequate knowledge of Statistical/Mathematical Economics either through training or research.

In the case of a candidate of exceptional merit the Executive Council may, on the recommendations of the Selection Committee and with the prior approval of the Khuladhipati, relax any of the qualifications.

3. Preference will be given to Scheduled Caste and Scheduled Tribe candidates if found suitable. Candidates already in service should apply through proper channel.

4. Applications (8 copies) duly filled-in and accompanied with crossed Indian Postal Order of Rs. 10/- should reach the undersigned on or before 28th February 1977, the envelope being superscribed as "Application for Professor in Economics."

5. The University reserves the right to fill-up or not to fill-up the post and/or to call only selected candidates for interview at their own cost.

A.G. Sharma
Registrar

UNIVERSITY OF SAUGAR

Advertisement No. 4/76

Applications in the prescribed form, obtainable from the office of the Registrar, University of Saugar on a requisition accompanied by a self-addressed envelope and a postal order of Rs. 5/- for the following post, are invited on or before 20th February, 1977.

2. Candidates already in service should send their applications through proper channel. An advance copy, however, may be sent direct.

3. Candidates selected for interview will have to come to Saugar at their own expenses and bring with them original research papers, degrees etc.

4. The University reserves the right to negotiate on the recommendation of the Selection Committee to negotiate

with a suitable person/persons, if necessary who may not have applied.

One Temporary Assistant Professor—
Department of Anthropology & Sociology (upto 25.6.78).

Pay Scale : Rs. 400-40-800-50-950.

- Qualifications :—**
- (a) A first or second class Master's Degree of an Indian University or equivalent qualification of a foreign University in the subject concerned.
 - (b) A research degree in the subject concerned or experience

of teaching degree and/or post-graduate classes will be desirable qualification.

- (c) Knowledge of Hindi will be desirable.
- (d) Applicant must have a consistently good academic record.
- (e) Candidate must have a Specialisation in Social Anthropology/Sociology of Development.

B.B. Khare
REGISTRAR

GUJARAT UNIVERSITY

Applications are invited in the prescribed form available from the Registrar Gujarat University, Ahmedabad-380009 so as to reach him on or before 23th February 1977 for the following posts in the University Schools :—

1. Professor of Physics (Ionosphere)	one post
2. Professor of Sociology (Research Methodology)	one post
3. Professor of Political Science (Regional Politics)	one post
4. Professor of History	one post
5. Professor of Hindi	one post
6. Professor of Sanskrit	one post
7. Professor of Textile Chemistry	one post
8. Professor of Analytical Chemistry	one post
9. Professor of Polymer Science	one post
10. Professor of English	one post
11. Professor of Gujarati	one post
12. Professor of Physics	one post
13. Reader in Chemistry (Theoretical Chemistry/Physical/Inorganic Chemistry/Solid State Chemistry)	one post
14. Reader in Physics (Theoretical Solid State Physics)	one post
15. Reader in Botany (Microbiology)	one post
16. Reader in Zoology (Reproductive Physiology Cytogenetics)	Two posts
17. Reader in Mathematics	one post
18. Reader in Statistics (Applied Statistics (Applied Statistics operations Research)	one post
19. Reader in Economics (Econometrics/Quantitative methods)	Two posts
20. Reader in Sociology	one post
21. Reader in Political Science	one post
22. Reader in Labour-Welfare	one post
23. Reader in History	one post
24. Reader in Psychology	one post
25. Reader in Philosophy	one post
26. Reader in Gujarati	one post
27. Reader in English	one post
28. Reader in Language Laboratory for English & Foreign Languages	one post
29. Reader for Centre for Management and Professional Training	one post
30. Reader in Persian	one post
31. Reader in Law	one post
32. Reader in Textile Chemistry	Two posts
33. Reader in Analytical Chemistry (one for Micro-Analysis) (one for Bio-Pharmaceutical)	Two posts
34. Reader in Polymer Science	Two posts
35. Reader in Education	one post
36. Reader in Chemistry	one post
37. Lecturer in Botany (Ecology)	one post
38. Lecturer in Botany	Two posts
39. Lecturer in Mathematics	one post
40. Lecturer in Economics	one post
41. Lecturer in Labour Welfare	one post
42. Lecturer in History	one post
43. Lecturer in Gujarati	Two posts
44. Lecturer in Linguistics	one post
45. Lecturer in English	Two posts
46. Lecturer in Hindi	Two posts
47. Lecturer in Sanskrit	one post

- | | |
|--|-------------|
| 48. Lecturer in Language, Laboratory for English and Foreign languages | one post |
| 49. Lecturer in Tamil | one post |
| 50. Lecturer in Microbiology | Two posts |
| 51. Lecturer in Computer Science | Two posts |
| 52. Lecturer in Law | Two posts |
| 53. Lecturer in Geography | Three posts |
| 54. Lecturer in Textile Chemistry | |
| 55. Lecturer in Analytical Chemistry (one for Electronics/Electrical Engineer) | Two posts |
| 56. Lecturer in Polymer Science | Three posts |
| 57. Lecturer in Zoology | one post |

Note :—For posts No. 9,34 & 56. Preference will be given to candidates having Engineering-Technology back ground.

PAY SCALE :—Professor Rs. 1500-60-1800-100-2000-125/2-2500.
 Reader Rs. 1200-50-1300-60-1600-assessment-60-1900.
 Lecturer Rs. 700-40-1100-50-1300- assessment 50-1600.

A Copy of the rules governing minimum qualifications can be obtained on request.

The above posts carry Dearness Allowance and other allowances as per the rules of the University. The benefits of either Provident Fund and Gratuity or pension will be admissible as per the rules of the University in force from time to time. The candidates selected for the above posts shall have to learn the Gujarati language during the period of probation. Application form can be had on payment of Rs. 2/- payable in advance either in cash or by money order or by postal order.

K C. PARIKH
 UNIVERSITY REGISTRAR

UNIVERSITY OF JODHPUR JODHPUR

Advertisement No. 21/76

Applications are invited for the following posts :

1. Professors : (1) English (2) Hindi (3) Philosophy (4) Sanskrit (5) Economics (6) Geography (7) Chemistry (8) Botany (9) Law (10) Commerce.

Scale of pay : 1500-60-1800-100
 2000-125/2-2500

2. Readers : (1) English (2) Sanskrit (3) History (4) Philosophy (5) Economics (6) Political Science (7) Chemistry (8) Zoology (9) Botany (10) Mathematics (11) Geology (12) Commerce (13) Civil Engineering (14) Structural Engineering (15) Mechanical Engineering (16) Mining Engineering (17) Law.

Scale of Pay : Rs. 1200-50-1600-60-1900.

3. Lecturers : (1) English (2) Hindi (4) History (5) Philosophy (6) Music (7) Sanskrit (8) Home Science (9) Economics (10) Political Science (11) Sociology (12) Geography (13) Psychology (14) Physics (15) Statistics (16) Zoology (17) Botany (18) Geology (19) Commerce (20) Civil Engineering (21) Structural Engineering (22) Mechanical Engineering (23) Electrical Engineering (24) Mining Engineering (25) Law.

Scale of Pay : 700-40-1100-50-1600.

4. Assistant Registrar : Scale of Pay : Rs. 750-30-1020-40-1300-50-1350

5. Research Fellow in Commerce : Scale of Pay : Rs. 350-25-600.

6. Research Assistant in Commerce : Scale of Pay : Rs. 300-25-350

7. Stenographers : Scale of Pay : Rs. 460-10-490-20-770.

Application forms alongwith details of qualifications/specialisations ect. can be obtained from the undersigned for which a crossed Indian Postal Order for Rs. 2/- endorsed in favour of the Registrar, University of Jodhpur, Jodhpur payable at Jodhpur be sent alongwith a self-addressed envelope of 24 x 11 cms. size bearing postage stamps of 0.85 paise. The last date for receipt of application is 7th February, 1977. The Vice-Chancellor may at his discretion condone delay in receipt of applications.

Those who have already applied in response to Advertisement No. 5/76 or any other advertisement referred to therein need not apply again. However, in view of the modification in qualification for recruitment, the application will be scrutinised in the light of the revised qualifications adopted by the University. The University will call for interview only limited number of candidates. No T.A. and D.A. will be given to the candidates who are called for interview.

REGISTRAR

Personal

1. Dr. Amrik Singh Cheema, formerly Adviser to the Union Ministry of Agriculture, has been appointed Vice-Chancellor of Punjab Agricultural University, Ludhiana.
2. Dr. P. S. Lamba, Vice-Chancellor, Udaipur University, has been elected President of the Indian Society of Agronomy.
3. Dr. A. K. Dhan has been appointed Vice-Chancellor of Patna University.
4. Mr. M. A. M. Gilani has been appointed Vice-Chancellor of Bhagalpur University.
5. Dr. Shaligram Singh has been appointed Vice-Chancellor of Ranchi University.
6. Dr. R. C. Mehrotra, Vice-Chancellor, University of Delhi, has been elected General President of the Indian Science Congress for the 1979 session.
7. Dr. A.B. Joshi has been appointed Vice-Chancellor of Mahatma Phule Krishi Vidyapith.
8. Shri S.D. Gogoi has been appointed Vice-Chancellor of Dibrugarh University.
9. Prof. T.K. Tope, Vice-Chancellor, University of Bombay, has been elected as the Chairman of World University Service, Bombay Committee.

Dear Subscriber

From January 1, 1977 the journal is posted on 1st and 16th of every month. If you do not have your copy for any issue by the mailing date of the next issue please write to us for replacement. Requests received later than that will not be entertained. Available back issues can be had as per prescribed rates.

UNIVERSITY OF POONA

Applications are invited for the undermentioned posts in the various Departments of the University :—

I. Professors : 1. English : (Language, Stylistics and Language Teaching) (One), (Literature), (One), 2. German : (Language and Literature) (One), 3. Linguistics : (Applied Linguistics—for Centre of Advanced Study in Linguistics in Leave Vacancy) (One), (Specialization in Indo-European studies and Sanskrit Lexicography) (One), 4. Philosophy : (Seth Hirachand Nemchand Professor in Jain Philosophy) (One), 5. Archaeology : (Specialization in either Historical Archaeology or Pre-Historic Archaeology) (One), 6. Sociology : (Research Methodology) (One), 7. Journalism (One), 8. Chemistry : Organic Chemistry (One), (Bio-Chemistry) (One), (Inorganic Chemistry) (One), (Physical Chemistry) (One), 9. Physics : (Material Science Opto-Electronics) (One), (Theoretical Solid States Physics) (One), 10. Botany : (Two—One in Experimental Botany), 11. Zoology : (Two—One in Entomology), 12. Mathematics & Statistics : Lokamanya Tilak Professor (One), 13. Geology (One), 14. Geography : (Two—One in Geomorphology).

II. Readers : 15. English : (Language) (One), (Literature) (One), 16. Russian : (One), 17. Marathi : (Two), 18. Hindi : (Two), 19. Linguistics (One), 20. Sanskrit & Prakrit Languages : (Veda and/or Srauta) (One), 21. Philosophy : (Two—One at Pratap Centre, Amalner), 22. Defence Studies : (One), 23. Library Science : (One), 24. Law (One), 25. Physics : (Instrumentation) (One), (Radiation—Physics and Chemistry or Radiology and Biophysics) (One), 26. Zoology : (One), 27. Geography : (One), 28. Mathematics : (One).

III. Lecturers : 29. Politics (One), 30. Physics : (Two), 31. Statistics : (Three), 32. Philosophy : (One), 33. History : (One), 34. Law : (One).

General Qualifications :

- (1) **Professor :** Must be scholar of eminence, must have to his credit research work of independent merit, must possess fairly long experience of teaching of Post-graduate classes and guiding advance research in the respective subjects.
- (2) **Reader :** Must possess fairly long experience of teaching of Post-graduate classes and guiding research in the respective subjects.
- (3) **Lecturer :** Must have a Doctor's Degree or published work of an equally high standard and consistently good academic record with First or High Second Class. (B+) Master's

Degree in a relevant subject or an equivalent Degree of a foreign University.

Minimum Qualifications

Professor and Reader : As prescribed by the University for recognition as Post-Graduate Teacher (by Research).

Lecturer : As prescribed by the University for recognition as Post-Graduate Teacher (by Papers).

Scales of Pay :

Professor : Rs. 1100-50-1300-60-1600.

Reader : Rs. 700-50-1250.

Lecturer : Rs. 400-40-800-50-950.

These scales are likely to be revised.

All posts carry usual allowances admissible under University rules in force from time to time.

Age Limit :

Candidates applying for the posts of Professors should ordinarily be below the age of 50 years, those applying for the posts of Readers should ordinarily be below the age of 45 years, those applying for the posts of Lecturers should ordinarily be below the age of 35 years. However, this age limit may be relaxed in the cases of deserving candidates.

Eight copies of applications together with the eight copies of testimonials, if any, separately for each post, giving particulars in the prescribed form should be sent to the Registrar so as to reach him not later than the **15th February, 1977**.

The prescribed set of application forms, together with requisite detailed information, will be supplied to the candidates, on request accompanied by (1) a self-addressed envelope (23 cm. x 10 cm.) bearing postal stamps worth 85 paise for the postage, and (2) a postal order of Rs. TEN drawn in the name of Registrar, separately, for each post. This amount will also be accepted in cash in the University Office.

The applicants, in their letters, asking for set of application, must specify (i) the name and (ii) the serial number of the post, for which they want to apply.

The selected candidates will be on probation for a period of two years and will be required, on confirmation, to contribute to the University Provident Fund and to enter into an agreement of service with the University. They will also have to pass a test in elementary Marathi, at the time of confirmation, if Marathi is not their mother-tongue.

- Notes :—**
1. Those who are employed must submit their applications through the proper channel.
 2. Some of the conditions may be relaxed in the case of exceptionally capable candidates.
 3. Candidates called for interview will have to present

themselves for an interview at their own expense.

4. Canvassing, direct or indirect, will be a disqualification.
5. In the case of lecturers, other things being equal, preference will be given to candidates belonging to Scheduled Castes (including Scheduled Castes converts to Buddhism) and Scheduled Tribes.
6. Higher starting salary may be given to deserving candidates.

G.J. Abhyankar
University Registrar

Ganeshkhind, Poona 7.
Ref. No. BUTR/S.O./118
Date : January 5, 1977

ALIGARH MUSLIM UNIVERSITY ALIGARH

Advertisement No. 28/76-77

Applications are invited for the following posts under a Research Project entitled "Measurement of Agricultural Productivity to delineate areas of High & low Agricultural Productivity in order to reduce regional imbalances", Department of Geography. The appointment will be made for the duration of the Project.

1. **Research Associate, Department of Geography.** Salary Rs. 700/-per month fixed (all inclusive).

Qualifications : Consistently good academic record with first or high second class (B+) Master's Degree in Geography of an Indian University or an equivalent degree of a foreign University.

Desirable : Some experience of teaching/research.

2. **Field Assistants, Geography Department.** Salary Rs. 500/-per month fixed (all inclusive).

Qualifications : A first or high second class Master's degree in Geography/Statistics/ Economics. Experience of conducting and guiding different types of Socio-Economic Surveys and knowledge of topographical and thematic maps.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self addressed envelope of 23x10 cm. Last date for receipt of applications is **15th February, 1977**. Incomplete applications and those received late may not be considered. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railwayfare only.

Jamalur Rahman
Registrar

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champagne and look into the warm eyes of a beautiful air hostess, you'll know you have really lived. (There's enough to get you high and happy!) Later when (if) you leave your super cushioned throne, you can saunter up to the suave Maharajah Lounge, our plush 747 clubroom. Play a round of bridge, make important contacts, clinch a deal.

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University lews

A CHRONICLE OF HIGHER EDUCATION & RESEARCH FEBRUARY 16, 1977 80 PAISE



Prof. R. S. Krishnan, Vice-Chancellor, University of Kerala, presiding over the Conference of Southern Vice-Chancellors held in Trivandrum recently.

SARDAR PATEL UNIVERSITY

Vallabh Vidyanagar

Via : Anand

Gujarat State

Notification No : EST/3 (1976-77)

Applications in the prescribed forms (in nine copies for teaching posts) available from the University Office on payment of Re. 1/- in cash or by Indian Postal order, are invited for the following posts so as to reach the undersigned on or before 22.2.1977.

I : Teaching posts in University Post-graduate Departments :

A : Professor of Physics : (2 posts) (In Solid State Theory, Solid State Electronics, Quantum Electronics) in the Scale of pay Rs. 1500-60-1800-100-2000-125/2-2500.

B : Reader : (Scale of pay Rs. 1200-50-1300-60-1600 - assessment-60-1900).

(i) **Physics :** (2 posts) in X-ray Crystallography/Spectroscopy/Quantum Electronics.

(ii) **Chemistry :** (2 posts) each in Physical/Organic and Industrial/Theoretical Chemistry.

(iii) **Life Sciences :** (2 posts) in Biochemistry and Plant Physiology.

(iv) **Statistics** (v) **English** and

(vi) **Home Science** (Food Nutrition)

C : Lecturers : (Scale of pay Rs. 700-40-1100-50-1300-assessment-50-1600)

(i) Chemistry (two posts); (ii) Botany and Life Sciences (three posts); (iii) Economics (two posts); (iv) Commerce (four posts); (v) Sociology (two posts) and One post each in (vi) History, (vii) Political Science (viii) English (ix) Gujarati; (x) Hindi and (xi) Home Science.

D : Technicians : (Scale of pay Rs. 700-40-1020-EB-45-1200-50-1300-EB-50-1500). One each in Physics and Chemistry Departments and Two for Life Science Department (each in Microscopy, Microtomy and Museum and in Bio-Chemistry and Microbiology).

II : For University Computer Centre & Museum :

Name of the post	Scale of pay
1. In-charge Computer Centre :	Rs. 700-50-1250.
2. Junior Programmer :	Rs. 425-15-500-EB-15-560-20-600-EB-20-700.
3. Machine Operator :	Rs. 350-12-410-EB-12-470-EB-15-560.

4. Punch Operator : Rs. 260-6-308-EB-6-326-8-350-EB-8-390-10-400.

5. Curator for Museum : Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200.

Details regarding qualifications, experience, etc. will be supplied along with the application forms. Preference will be given to the qualified candidates belonging to scheduled castes/scheduled tribes.

Candidates should send the copies of the Mark-sheets along with the application forms.

Vallabh Vidyanagar **K. A. Amin**
Dated 18-1-1977. **REGISTRAR**

HIMACHAL PRADESH UNIVERSITY, SIMLA-171005

'Recruitment Branch'
Advertisement No. 1/77.

Applications are invited for the following posts :—

A—University Teaching Departments :

1. Professor of Physics.
2. Assistant Professor of Law.
3. Laboratory Technician in the Department of Physics.

B—Agricultural Complex :

4. Assistant Professor of Physics.
5. Research Assistant (Plant Breeding) in the Department of Forestry.
6. Research Assistant (Organic/Bio-Chemistry) in the Department of Forestry.

QUALIFICATIONS & PAY SCALES :

(i) **Professor :** 1500-60-1800-100-2000-125/2-2500.

Ph.D or an equivalent degree; five years post-graduate teaching/teaching of honours classes or five years post-doctoral research in a University or a Research Institute; and distinguished research work.

(ii) **Assistant Professor :** Rs. 700-40-1100-50-1600.

(a) Ph.D or an equivalent degree or published work of an equally high standard in the subject concerned; and (b) having consistent good academic record with First or High Second Class (B plus) Master's degree in the subject concerned or in an allied subject, or an equivalent degree of a foreign University.

(iii) **Research Assistant :** Rs. 700-40-1100-EB-50-1300-Assessment-60-1600.

(a) M. Phil or an equivalent degree or published work indicative of capacity for independent research

work; and (b) having consistent good academic record with First or High Second Class (B plus) Master's degree in the subject concerned or an allied subject, or an equivalent degree of a foreign University.

(iv) **Laboratory Technician :** Rs. 300-20-420.

Certificate or Diploma in Instrumentation from a recognised Institution OR B. Sc. with at least five years of experience of maintaining and repairing electronic and electrical equipments in Physics laboratories.

Age : Between 18 to 30 years.

The above scales carry with them dearness allowance and benefit of C.P.F./G. P. F. etc in accordance with the rules of the University.

Provided that the Executive Council may, if necessary, relax any qualifications at (b) above on the recommendations of the Vice-Chancellor or the Selection Committee, as the case may be, if the research work of a candidate as evident either from his thesis or from his published work is considered to be of a very high standard.

Provided further that a candidate possessing a consistent good academic record may be appointed, if a candidate with qualifications at (a) above is not available or is not considered suitable, on the condition that he will have to attain the required qualifications, within five years of his appointment, failing which he shall not earn future increments until he fulfils the conditions.

In case of selection and appointment the person concerned will have to serve the University at least for a period of two years. Higher start in the grade is admissible on the basis of special qualifications and experience.

Applications should be made on the prescribed form obtainable from the Registrar by sending a self-addressed stamped envelope (size 23x10 cms) and applications complete in all respects together with a crossed postal order of 7.50 (not applicable in case of those applying from outside India), drawn in favour of the Finance Officer, Himachal Pradesh University, should reach the undersigned by the 28th February, 1977. A person applying for more than one post should send a separate application for each post.

Note : Persons who have applied for the post of Laboratory Technician in response to our advertisement No. 11/76 need not apply again. They may, however send additional information, if any.

A.S. Bajwa
REGISTRAR

UNIVERSITY NEWS

Vol. XV

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No. 4

1977

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of Higher Education* Price
80 Paise

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Editor : ANJNI KUMAR

UGC Plan of Action

Examination Reforms

Under the UGC Plan of Action, the University of Rajasthan has introduced, inter alia (i) 30 per cent internal assessment, and at the first year level, even the remaining 70 per cent too will be done by the teacher who teaches; and (ii) Question banks. Assessment by the teacher who teaches is in itself a commendable proposition. But there is a great hazard in the scheme. Under this scheme of internal assessment, even the one who does not teach, examines. The scheme is perilous inasmuch as it puts those students at a great disadvantage who unfortunately cannot afford to have private coaching. This is a very serious problem and must be remedied. Unless private coaching is effectively prevented, the internal assessment will be reduced to a farce. With a view to providing aid to needy weak students, institutional coaching arrangements should be made by the college itself on payment of nominal coaching fee, and the coach may be paid on per lecture basis. A teacher should in no case be allowed to undertake private coaching. It must be effectively banned.

The idea of having question banks also deserves reconsideration. In some subjects, the question banks have been tailored either in haste or with less care so much so that they do not serve the purpose they were expected to. Of course, the question banks are to function as the banks generally do; that is, some questions will be withdrawn, and a few new ones added every year. Even so there is need to be more careful in the selection process. Right people should be entrusted with the task of framing and revising the question banks, and they should be given enough time to complete their work. Some orientation may also be considered for those who are to undertake the work of framing and revision so that they could catch the spirit behind the scheme.

There may be a suggestion for answer banks too. But there will always be alternative answers in theory papers and there will always be divergence according to the level of understanding. So there can be no one standard answer that could be accepted as model answer fetching 100 per cent marks. Again, with a view to discouraging students from restricting their studies only to question banks, the question paper in the examination may contain say 30 per cent questions from outside the bank. The paper itself may be divided into two parts—Part 'A' containing seven questions from the bank and Part 'B' containing three questions from outside. One question from the 'B' Part may be made compulsory. This will certainly prompt the student to widen his area of study which, at present, is most likely to be limited to question banks. Most naturally, it will help students to be better equipped.

At present, in Rajasthan University, the semester system of examination is in vogue only at the Post-

(Contd. on page 94)

New Experiment in Non-formal Education

S.V. Chittibabu*

In view of the clarion call of our Prime Minister for democratisation of education and the most welcome proposal of our Union Minister for Education for the expansion and diversification of correspondence courses with the aid of mass media and a network of study centres on what is called the 'open' pattern, it is but appropriate that existing universities should shed their conservative and conventional outlook and venture to try out innovative programmes of non-formal and continuing education, if they are to prove their mettle as potential agents of social change.

The UNESCO report of the International Commission on the development of education, 1972, highlights the dimensions of the surging wave of changes that has entered the educational scene in both developed and developing countries over the past ten years with varying degrees of success. These changes all aim at devising more effective and flexible forms of education that can attract into educational circuits such sections of the population as have been usually kept out from them by constraints of traditionalism and formalism.

We hear of polyvalent classes, multivalent school, transition courses workers' universities, open universities, modular scheduling, free studies etc. which imply the formulation of new concepts in the organisation and structure of knowledge a reappraisal of the authoritarian transmission of learning in conventional institutions and a quest for alternatives.

Strategy

But in seeking ways and means to fulfil this need we must avoid basing our strategies on extrapolation of past trends. On the contrary we must raise our sights to make an up-to-date concrete study of the educational needs of individuals as well as of groups, in relations to such factors as employment, agricultural growth, industrial productivity, conditions of life and work, social changes, individual aspirations, availability of mass communication, media etc.

No longer should strategies be hidebound by "One single medium one form of institution or one so-called "systemic" structure. They should be poly-

valent and capable of exploring new pathways for the future. But then, while we embark upon the task of developing and reforming educational institutions and methods, we must not brush aside the means and techniques in the world of today which give us a foot-hold for effecting an improvement of extant modes and structures, institutions and systems as well as for forging fresh alternatives to them. This quest for practical alternative may be deemed to be part of an adventure in the direction of innovation.

Traditionally education was envisaged as a time-bound programme both in the East and the West. It was considered possible to impart all the knowledge skills and attitudes needed through education over a specified period of time.

Keystone

The concept of life-long education has now been evolved to help people constantly renew themselves through education processes. In fact, this has now come to be regarded as the "keystone of the learning society".

Education is being now liberated from a cloistered existence. As Prof. Nurul Hasan has said "The present day education has broadly been a single-point entry, sequential, full-time system of institutional instruction and it is essential to transform it into a new system in which there would be opportunities for multiple lateral entries at several points and in which all the three channels of instruction, full-time, part-time and self-study would be integrated in an appropriate fashion and would have equal status".

Education whether formal or non-formal should be available to any person who may choose his path without any impediment, and learn at his own pace under a variety of circumstances and conditions moving from closed prescriptive systems to open non-prescriptive ones. In other words this would mean the introduction of what is called 'Recurrent Education' which would benefit all those who wish to move horizontally and vertically within an overall open education system entering freely at various stages and leaving at different points. Students may pursue higher studies without having previously gone through a complete course of formal schooling. Furthermore there should be no disqualification on grounds of interrupted studies, especially at the university level. The proposition should be accepted that any one can move between one educational circuit and another even during one course.

It was in October last that I had the unique opportunity of visiting the Open University in Milton-Keynes, Buckinghamshire 45 miles northwest of London. It is on the basis of an evaluative study of the avowed objects and modalities experiments and experience of the open university in the United Kingdom that Madurai University has recently

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accepted the proposal of its Institute of Correspondence Courses and Continuing Education offering the B.A./B.Sc. degree course to all adults who are 25 and above notwithstanding their possessing no previous academic qualification.

In the light of a note that I place before the Syndicate spelling out my suggestions for experimenting with the Open University concept making use of resources available in the existing Institute of Correspondence Courses and Continuing Education, a sub-committee of the Syndicate studied the various aspects of the proposal and came out with its broad recommendations for the introduction of an integrated degree programme somewhat patterned on what the Open University in the United Kingdom offers. These recommendations have been accepted by the Academic Council and the Senate of University. The details of the scheme are now being most carefully worked out in consultation with the various boards of studies, expert committees, principals of affiliated colleges and the A.I.R. Madras before its finalisation and early implementation by the beginning of 1977.

The proposed B.A./B.Sc. degree course is designed for adult learners aged 25 and above and resident in India. There will be a three-month trial period to give a chance to applicants to see whether they can stand the strain of undergoing the course.

Four Levels

The course is to be an integrated Five-Year B.A./B.Sc. Degree course offered at four levels—foundation, second, third and fourth. The foundation course will be of 2 years duration and must be taken by all who come without any previous academic qualification. Those applicants who have successfully completed a period of study at a higher educational level elsewhere will be given appropriate credit exemptions. The foundation course will be a graded one aimed at helping the student to attain the present school final level at the end of the first year with a study of all the basic subjects viz. languages including English, Mathematics, Physical and Biological Science, Humanities etc. In the second year provision will be made for a credit combination of Science, Mathematics and Humanities Courses leading to the present P.U.C. level. At the same time the basic objective of the foundation course will be to orient the candidates to the development of the essential skills of doing and learning.

After the foundation level students will be offered such combinations of courses as are suitably designed for enabling them to take their degree after going through the remaining levels.

Among a variety of distance teaching methods proposed to be adopted, correspondence tuition, radio broadcasts, tutorial and discussions at local study centres, practical experiments and tutor marked response sheets will figure as the unique features of the whole system. In this context I may say that the

present Institute of Correspondence Course and Continuing Education in the University has, in the last five years very largely succeeded in effectively organising its Correspondence Tuition supplemented by contact classes and evaluation of response sheets. In the proposed Open University courses the correspondence material will no doubt be the most important component and what is more will be integrated with reading materials, broadcasts and assignments.

Madurai University has over 100 colleges affiliated to it and at least 75 per cent of them have suitable accommodation, fairly well-equipped laboratories and good libraries. In these colleges local study centres are proposed to be set up and students of the Open University courses can come there in the evenings when the colleges do not have their regular sessions and make use of the laboratories and libraries there. Besides, part-time tutors will be recruited from the teaching staff of these colleges and they will give personal guidance to the students, conduct face-to-face tutorials, organise discussion groups, field trips and evaluate the response sheets.

The above experiment of initiating a new non-formal educational programme based on the Open University pattern in a way is to be tried out in the light of the experience already gained by the Institute of Correspondence Course in running several courses in the last five years.

Since its inception the Institute has been serving the needs of those seeking higher education. The number of students enrolled has been increasing notably from year to year and today it stands at 30,000. Various courses including 5 postgraduate courses cater to the needs of the students.

Contact seminars three times a year are arranged in almost all the district headquarters. The seminars are arranged on Saturdays and Sundays. They enable the students to meet the teachers and have their doubts clarified. Generally, about 60 per cent of the students are attending these seminars which help the teachers to get the feedback on the lessons they have prepared and also enable them to revise their lessons suitably.

An important feature of the Madurai University Correspondence Course is that it has started broadcasting talks on various subjects from this year. At present all the process of the B.A. and B.Com. courses are covered. The talks are broadcast from Monday to Friday every week from 7.25 A.M. to 7.45 A.M. It is hoped that the TV will also come to the aid of the Institute in due course.

Of course there may be initial bottlenecks and impediments to overcome while implementing the proposed Open University programme. There may be pophets of gloom and despair to whom non-institutionalised forms of education may be unpalatable and unwelcome. But the resentful attitudes of such people need not deter us from creaking new ground and giving a vibrant thrust to our new educational pursuits. ●

Financing of Higher Education

D. P. Nayar

While finance is not everything, it is one of the most important determinants of what development can be planned. The financial aspect has two major components: How much we have and how we spend it. How much we have, depends upon the total resources available and the priority that is given to education in the first instance and, within education, to higher education, in the second instance.

Priority to Higher Education

As regards priority, education has received high priority and within education, higher education has received the highest priority. Between 1950-51 to 1965-66, whereas the annual rate of growth (compounded) of national income was only 3.4% (at constant prices), the rate of growth of expenditure on education was 9.1% and that on higher education 12.0%. Whereas educational expenditure as a percentage of the national income increased only from 1.2 to 2.6 during the same period that on higher education increased from 0.19 % to 0.64 %.

This priority, however, which has emerged was not the one intended. We began with a "top-heavy" structure, as pointed out by the First Plan, and "the emphasis on primary education needs (needed) to be very considerably increased." The same thing emerges from the following Table comparing the position in India and Japan :

TABLE I*

Educational Level	Percentages	
	In Japan**	In India***
1. Kindergarten	0.5	0.2
2. Elementary schools	42.1	29.9
3. Lower secondary schools	22.7	15.0
4. Special schools	0.8	1.3
5. Upper secondary schools	14.2	25.7
6. Miscellaneous schools and Correspondence education	0.1	4.0@
7. Junior colleges and universities	11.4	21.2
8. Social education	2.5	£
9. Educational administration	5.7	2.7
	100.0	100.0

* Nayar, D. P.; Education in Japan, National Council of Educational Research and Training, 1965, p. 15.

** Excludes expenditures of donations that are not accounted for by governmental agencies.

*** Excludes expenditure on buildings, scholarships, hostels and other miscellaneous items as stage-wise break-up is not available.

@ Vocational and technical schools.

£ Included under item 4 above.

But in actual fact the percentage of outlays on university education has been going up and that on primary education has been going down as will be seen from Table II.

TABLE II

Sub-Head	Outly Percentage in				
	First Plan	Second Plan	Third Plan	Fourth Plan	Fifth Plan
1	2	3	4	5	6
Elementary Edn.	55.0	28.9	30.0	28.5	43.0
Secondary Edn.	13.0	16.6	18.0	14.4	14.0
University Edn.	8.9	18.6	15.0	22.3	20.0
Technical Edn.	13.6	15.6	21.0	15.2	9.0
Others	9.5	20.3	16.0	19.6	14.0
	100.0	100.0	100.0	100.0	100.0

It will be seen that the plans do not set right the priorities. On the other hand they aggravate the existing distortion in the system. The situation becomes worse when one looks at expenditure. For whereas under elementary education shortages occur in university education the expenditure generally exceeds the allocations. The prospects for the Fifth Plan show that it will go the same way as the earlier plans have gone. The reasons for this discrepancy between aims and achievements are the non-vocality of the clientele for elementary education and vocality of the clientele for university education as well as the comparative ease with which you can control the beginning of the pipe-line rather than the end thereof. Therefore, those of us who are working in the field of higher education are in the fortunate position of getting away with larger amounts than could be rationally allocated to us. Hence our responsibility becomes still greater for optimum utilisation of the funds placed at our disposal. It is, however, common knowledge that even though, relatively speaking, higher education get larger funds, the total resources available are not adequate because of the comparative costliness of higher education and the large numbers involved, which we have not been able to control.

Mobilisation of additional resources

It is common knowledge that the fees charged in India are perhaps the lowest in the world, compared to the cost of the service rendered. A heavy governmental subsidy is embedded in the whole scheme of

financing of higher education. And what is worse the subsidy goes to the better off classes. In 1964-65 for example, the number of students from the rural areas, where most of our population lives, was only 9.1% of the total enrolment at the university stage. Though no facts and figures are available, the position of the slum dwellers in the towns is not likely to be any better. The large number of the students in our colleges and universities can, therefore, afford to pay more. Secondly, the majority of those who goes for higher education are not fit for profiting from it. And so both from the point of view of competence and quality the subsidy is not justified. As a matter of fact the heavy subsidy limits our capacity to launch a big programme of assistance to the weaker sections of society. However, most State Governments have found it difficult to raise fees as such attempts have always led to violent agitation. Instead of raising the fees directly on a uniform basis all over a State one could levy development fees by individual institutions for particular development projects. I would, however, prefer the direct raising of fees rather than of raising them indirectly through development fees, as it leads to exploitation of students by certain well-placed and prestigious institutions. One can also consider differential fees, charging normal fees from those who are fit for profiting by higher education and on the cost of service basis from those who are really not fit but who still manage to come to the university. Raising the fees would have the additional advantage of limiting enrolments.

The second way of augmenting resources is to attract private donations. This source has been drying up quite rapidly in recent years. But the source needs to be stimulated and revived through larger extension services by the institutions and thereby strengthening the college-community relationship. The possibility of this will be greater to the extent that higher education (as other education) becomes relevant to the problems of the community. The revision of the income-tax relief rules will also need to be considered for stimulating greater private contribution. For example, there could be no ceiling, or at least it could be raised, on contributions from individuals/corporations for purposes of income-tax exemption. A cess on industry for technical education should also get strong support in view of the fact that industry gets through technical education its most important input for production. Industry is being brought in in an increasingly big way through the apprenticeship programme. Attempts are also being made to persuade industry to adopt certain technical institutions where they will not only have managerial responsibility but also share the cost of their development. The grant-in-aid rules could also be liberalised which will encourage private institutions to set up their own institutions. The question of levying a cess on religious trusts can also be considered.

Optimum utilisation

The second difficult problem is the problem of optimum utilisation. This calls for action on three fronts :

- (1) Proper funding arrangements;
- (2) Determination of correct internal priorities within higher education; and
- (3) Prevention of waste and over spending.

As regards **funding arrangements**, it is best if an institution is assisted by only one major source. For the funding authority is thereby likely to be more responsible to the total needs of the institution. If for some reason more than one source has to be used then their contributions should be coordinated. This lack of proper coordination between the U.G.C. and the State funds flowing to the universities is a good example of the difficulties such a situation creates. The State Governments, when they draw up their plans have no idea of what the U.G.C. will provide and what they will have to provide to lift the U.G.C. assistance. Then when the U.G.C. announces its assistance, the State Governments, if they have not provided adequately, have the very unpleasant choice of foregoing the U.G.C. grants and arousing the ire of the universities or distorting their other programmes by diverting money from them to their university programmes to lift the U.G.C. assistance. One way out would be to demarcate the areas of the U.G.C. and the States. The U.G.C. could concentrate on post-graduate education and research innovative education etc. while maintenance and undergraduate education could be the responsibility of the States.

A second principle of good funding management is to coordinate the policies of different bodies giving grants for similar programmes. At present the ICAR, the UGC, the ICMR etc. give scholarships, for example, of varying amounts for broadly similar levels. That is why there is a strong view-point that all higher education should come under the U.G.C. or at least there should be a coordinating body which would evolve common policies.

The grant-in-aid system is erratic and the assistance provided is insufficient. For 2-3 years in the beginning the State Governments provide no assistance. Later on institutions are brought on the list of aided institutions as and when funds are available. And then too the grant is given not according to the carefully assessed needs of the institutions but according to the availability of funds. Under such circumstances the university institutions enjoy a very precarious existence. Even where block grants are given, they have been outdated by virtue of the price rise. What is needed is a very rigid system of allowing institutions to come up in the first instance—laying down strict conditions of recognition, survey of real need for the institutions etc.—but having been

allowed to come up their needs must be carefully assessed and fully met.

As regards **internal priorities**, priority should go to staff, libraries, and laboratories. An almost equally important priority should go to strictly functional buildings like instructional buildings and students hostel. The question of building is a controversial one. Planners generally give short shrift to this programme. The result has been a very accumulation of backlog. In 1963 a survey was conducted and it was estimated that educational institutions were short of 50 crore sq.ft. of space. In view of the ban on buildings which has been in existence with varying degree of strictness for the last many years, the situation might have become still worse. I am not aware of any later estimates of shortage of space in institutions of higher learning. In view of the fact that the building component of any expenditure on higher education is considerably more than in the earlier stages, the position of buildings in institutions of higher learning would be pretty serious. I venture to suggest that we need to take a balanced view in this regard. While we must have buildings (shelter is a basic need), we cannot afford any but buildings of the austere type. For this we need to take full advantage of research in construction economies that is being conducted at many places. Each university must have a committee—if that is not possible, then each State Government—which would keep itself abreast of all research that is being conducted in this line and utilise it, augmenting it with its own resourcefulness. The universities command large student populations who have to be given some work experience and who have engineers in their midst, who know the art of building. I do not see why the students and teachers should not be brought in a big way to help in the matter of construction of buildings. With the help of civil, mechanical and electrical engineering students such a project could be an excellent production centre, which all universities should have as recently recommended by the Indian Council of Technical Education for technical institutions. Another helpful step would be to locate a small engineering unit in the university itself, which might be in a better position to inform itself of the actual functional requirements of the various buildings and therefore, should be in a better position to devise functional structures. They would also be freer from red-tape than the PWD units. My third priority would be staff quarters. Again, on the austere possible model. Accommodation is a basic necessity for effective functioning of the staff. The position, however, will vary from place to place and in places where private accommodation at reasonable rent is available, the problem will not be as pressing as in places where no such accommodation is available. My last priority would be student amenities, again on the austere possible standards. I do not see why auditoria, swimming pools, cycle sheds, canteens etc. cannot be put up by the students themselves. This, especially when every educationist is crying

himself hoarse over the need for providing students with opportunities for work experience.

Another important economy is to control admissions through a package of practices as recommended in the Draft Fifth Plan : vocationalisation of secondary education, limitation of admissions in regular institutions on the basis of available facilities and merits, tempered by reservations for first generation learners, and the provision of the residual demand through non-formal channels. Similarly the spatial spread of educational institutions should be controlled. Educational institutions should be economically viable units. In hilly areas and scattered villages it may be more economical to set up a few large colleges with hostel facilities.

To prevent **waste and over-spending**, a development-oriented finance officer would concentrate on the physical tasks and targets, with their determined priorities, while sanctioning projects. The norms of expenditure must be worked out with great care. While no department should be able to get away with inflated figures, no department should get less than the critical minimum required. The process would be considerably helped if the various departments undertake this responsibility themselves. Otherwise, there may be no alternative to establishing (where it does not exist) as Central Planning Cell in the University, one of whose functions should be to evolve standard norms on which the finance officer could rely. The second question is to see that the money spent actually completes the task visualised and if there are any shortfalls the reasons therefor. In this regard a simple form of planning programming performance budgeting may be useful. One reform which is necessary for comparing planned and achieved task would be to have budget nomenclatures corresponding to plan nomenclatures. Another, even more profitable method of economising is to increase the out-put. This opens up the whole field of educational reform to make education more purposeful and more productive, into which I need not go at this juncture. An in-built system of evaluation in every programme supplemented by periodic external evaluation would be useful for streamlining educational programming and performance and for increasing the productivity thereof. Such programmes should, therefore, receive priority from finance instead of being looked askance at, as new and new-fangled programmes.

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Extension Services in Degree & Post-graduate Colleges

G.K. Rathi*

Education is a continuous activity which aims at an all round development of the personality of the person, his mental, physical, spiritual and sociable potentialities which can be unfurled if he or she is placed in a proper, optimum and congenial atmosphere in relation to his or her educational needs and the community by which he or she is surrounded. The syllabi based education shall remain as an incomplete process and can be looked at as an incomplete programme keeping the student ill or uninformed about what he should aspire for and aim at to emerge out as a good citizen. Bookish knowledge, scholastic endeavour and intellectual exercises will remain uncattered in case a student of a degree or postgraduate college fails to comprehend what are the educational needs of his surrounding community. This extra, non-prescribed and unprinted syllabi have to be provided to the educand by means of extension services.

Extension services in a degree or a P.G. College providing the students a scope to think of the educational needs of the surrounding society are bound to make him or her think as to what duties and obligations he or she would discharge towards the community of which he or she is an ingredient—a component of the whole. The concept of extension services in such colleges should be oriented after a thorough study of the topographical details of the place where the college is located, the type of community which feeds the college and the vocation which the community is going to opt or adopt. There can be no two opinions, if extension lectures in colleges are arranged for the students providing opportunities to think aloud within themselves how they are going to serve their community. To my mind, a triangular analysis of (i) the local needs of the community for better living, (ii) the vocation the pupils are going to take up after completing the education (iii), the core-content of the extension lectures which are arranged there in the college is necessary and if a correlation can be establish among these three aspects as well, it can be very well envisaged what type of citizens we will provide to serve the community. May I cite an example of my own college, named Bangur College, situated in a village Didwana which is a part of a desert belt having saltish water and devoid of agriculture output but having a good margin for industrial development specially based on chemicals and corollaries of sodium chloride and sodium sulphate. Besides,

Bangurs who are occupying a dignified status on the industrial map of India consume about 50% of the outgoing educated students from this college in their concerns. Had there been a planned, systematic and business oriented programme it would have certainly resulted in a good industrial development of his concerns but as it is, it does not exist. A series of extension lectures would certainly allow such students to think how they should have prepared themselves to take up the jobs.

From the above example we can very easily think and conclude as to what magnitude of advantage the community can be put to if well planned programmes of extension lectures are arranged at degree and postgraduate levels which are studied with matured intellectuals. The students at degree and postgraduate level are mentally and physically matured. They are capable of receiving what is given to them to think in a way of proper and logical explanation. The age-factor both the chronological and mental automatically is a factor which make us feel of their receptive capability. They are psychologically prepared to receive the suggestions if they understand that they are given to them for their welfare. Sanity in them by the time when they come and join colleges gains grounds and they are always in a position at the degree and postgraduate level to decide what is good and what is bad, what is good and what is better, what is better and what is best. Arranging extension lectures solely based on the triangular analysis as referred by me above co-ordinated with the right planning and execution are bound to lead the community for a better stepping and firm putting.

Right from the beginning of the session the incharge of extension services should chalk out a systematic, space controlled, objective oriented, conveniently manageable programme and a calendar to this effect be released in advance to keep the students aware of and prepared for such programme. The names of the dignitaries, their professions and the subjects and topics on which they are going to speak should be circulated amongst the teachers and students so that they can well in advance study the subject or topic of the lectures. A question hour should be fixed after the lecture is over or discussion groups may be formed to facilitate the process of learning amongst the students. If these things are put forth with an alluring fascination the best would come out of it, I am sure. In an area where the scope for industrial development is more the specific subject concerning the specific industry should be viewed at the time of fixture of the extension lecture. Learned persons, scholars, professionals and man of practical wisdom may keep the ball rolling and this practice is bound to broaden the outlook of the students and inspire them for an organised endeavour in the field of out-of-college activity by rendering substantial services to their surrounding community.

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Trivedi addresses South Gujarat convocation

The eighth convocation of the South Gujarat University was addressed by Shri H.M. Trivedi, Union Minister for Shipping and Transport. Mr. Trivedi pleaded for widening the role of the universities in the nation building. He said education has to play a vital role in this area. It can no longer afford to create islands for erecting ivory towers from where the proverbial star-gazers can fathom their personal inner skies. The nation cannot afford the luxury of allowing our young generations to pass the best years

and to its people. The education should therefore help the students in identifying themselves with the cause of the country.

For any developing nation the need for trained manpower is of great importance. Trained personnel are needed in large numbers to man its industries, to man its mechanized agricultural operations, to man units that produce

been invited by other countries to aid their developmental efforts. However even trained men have to build a new ethos wherein the social justice is the key word. Education is never ending process. Formal as well as informal ending process are both but means to an end. The end is the betterment of quality of human life. The universities will have to strive to play a significant role in shaping the minds of our young men entering society as responsible citizens. They should go to the society with a zeal to transform it into a modern society. In order that our universities fulfil this task we have to see that they do not become hot-beds of local passions and parochical sentiments. Intellectual debates should not be allowed to degenerate into conflicts that disturb the process of developmental efforts of the nation. On the other hand the universities will have to educate the leadership to bend all its energies to the solution of its numerous social and economic problems. It is in this context that our universities will have to develop a healthy balance between tradition and experiment, between the anxiety to preserve and the keenness to change.

The structural changes in the pattern of education, its effects on the existing institutions, on the teachers and students, on the managements, on the Government exchequer, etc. are some of the important problems which need our urgent attention. Mr. Trivedi pleaded for the establishment of continuing education departments in the university so that more facilities are made available for persons of all ages, caste and creed to study any subject of their choice. The restructuring of undergraduate courses can also be worked out under the new system of education.



Mr. H. M. Trivedi, Union Minister for Shipping & Transport, delivering the convocation address at South Gujarat University

of their lives in day dreaming in the colleges or to imbibe attitudes that go against the interests of the people of this land. We owe a huge debt to our motherland

atomic energy, to man its science research institutes and its laboratories. We in this country have been fortunate in this respect and our experts in various fields have

Changing U.P.S.C. Examination Patterns

Amongst the various proposals for the improvement of selection of candidates for various posts by the Union Public Service Commission, the introduction of objective type questions is attracting lot of attention. With the sliding increase of large number of candidates appearing for its various examinations, this change would be welcome.

Prof. A.R. Kidwai, Chairman of the Union Public Service Commission said that an experimental introduction of objective type of questions in some of the general knowledge papers for examinations conducted last year had evoked a "favourable response" from the candidates. Their performance in the examinations also showed a distinct improvement. The Commission has decided that for the recruitment of over 800 doctors for the Central Government Health Scheme and the Railways, the questions would be only of the objective type. About sixteen thousand applications have already been received for these posts. It is now proposed to take the help of the computers to ensure accuracy and speedy evaluation of the large number of answer scripts. The Commission would be able to publish the list of the candidates who qualify for interview within a month from the date of the examination.

The Commission has also decided that out of the seven papers of the engineering services examinations to be held this year, one paper would be wholly of the objective type. The scheme has been circulated to the various engineering colleges and institutes in the country. Speaking generally about the merit of papers based on objective type questions, Dr. Kidwai said that these would help to judge better the knowledge and abilities of the candidates, their capacity to apply knowledge to the solution of problems, originality and powers of compre-

hension and analysis. It would enable the students from general school to compete on an equal footing with those who had the benefit of public school education. Also it will eliminate the vagaries of assessment.

Despite the advantages of examinations based on objective questions, the Commission was going slow in the matter in regard to various examinations for recruitment for civil services. The examinations to be held in 1977 for recruitment to IAS, IFS and other central services would continue to be on the basis of the existing syllabus. A decision to switch over to objective type examinations for these services would be taken after the Government had decided on the recommendations of the Kothari Committee.

Dr. Kidwai pointed out that recruitment to civil services in many countries was already based on objective type examinations. The public sector and institutions of management in India are conducting such examinations. The Commission has however set up a strong examination reform section to study such developments. The Commission has also taken the advice of top experts in various fields in universities, the University Grants Commission and from such other expert bodies which conduct similar examinations in the country.

Comparability in postgraduate courses

While inaugurating the ten-day seminar on Modern English Literature organised by the University Grants Commission and the British Council at the Madras University, Dr. Malcolm S. Adiseshiah emphasised the necessity for certain element of comparability in regard to postgraduate courses in the southern universities. He said that there was a

great divergence among the universities in course structure, content and teaching methods especially in human sciences. There was an urgent need to bridge the gap.

He said that there should be a common purpose in the academic life of the universities. A step in this direction was also suggested at the last southern vice-chancellors conference held at Trivandrum. A four-member committee has been appointed to study the problems arising out of the varying content of postgraduate courses and the nature of examinations. The Committee will suggest steps to facilitate greater mobility of students. He stressed the need to restructure the postgraduate syllabi in English language and literature so that the standard of teaching and achieving higher levels of academic excellence. He urged the participants to trace international influence on modern English literature particularly the impact made by India and Asian and African countries.

Prof. S. P. Appaswamy, the Director of the seminar said that the outcome of the seminar would help the young teachers to a great extent in their professional task.

Prof. R. A. Foakes of the University of Kent also participated in the discussions. He emphasised on post second world war literature. It would study the links between drama, fiction and poetry and the place of an individual in relation to the surroundings. The seminar was attended by sixty academics from various southern universities. Prof. V. Y. Kantak and Prof. R. K. Kaul were the resource personnel.

Plea for reorientation of medical education

Dr. L. P. Agarwal, President of the All-India Ophthalmological Conference called upon the Medical Council to take immediate steps to re-orient medical education to meet the country's requirements. He demanded that ophthalmology should be treated as a separate discipline at the

MBBS level to ensure that medical graduates had adequate training to deal with the stupendous problem of blindness facing the entire country. "Basic doctors" with inadequate knowledge of the subject could not solve this problem effectively. He referred to the problems of specialisation and general practice in the medical profession and said that India needed basic doctors who could cater to the health needs of the people at the "peripheral level" and specialists who could look after the health services at the "intermediate and central levels. In any reorientation of medical education, due consideration should be given to this requirement.

Medicine and surgery have traditionally grown in two different compartments with artificial barriers between them. Unfortunately even in the modern specialisation the same barriers are continuing. The need of the hour was to produce a general practitioner or a specialist in organ discipline or discipline of a region of the body devoted to both surgical and medical aspects. The time had come to discard the traditional concepts of general medicine and general surgery.

Referring to the problem of blindness in the country, Dr. Agarwal said that on the basis of rough estimates there were about nine million blind persons both curable and incurable in the country. Cataract alone accounted for fifty five per cent of the cases, trachoma five per cent, infections fifteen per cent, smallpox three per cent, malnutrition two per cent, injuries 1.25 per cent and refractive errors 0.25 per cent. Other factors including systemic, neuro-ophthalmic and genetic disorders accounted for eighteen per cent of the cases. Besides this about 45 million people were visually handicapped.

Dr. Agarwal noted with satisfaction that the government had formulated a national policy for the prevention of visual impairment and control of blindness to be implemented in phases over a

period of twenty years. Its basic features were eye health education, creation of ophthalmic services at the peripheral, intermediate and central levels and provision of technical leadership through an apex organisation.

The thirtysixth session of the conference was attended by over six hundred eye specialists and surgeons.

1977 THES World Fellowship

The Association of Commonwealth Universities in collaboration with the Times Higher Education Supplement, London regularly awards world fellowship to persons from the member universities in a developing country (or from the Secretariat of the Inter-University Body in such a country) to enable them to visit another developing country to study or to obtain greater experience or training of a kind that would benefit their own university or country. This award is significant in a way as it enables a person from the developing country to observe and study the conditions prevailing in another developing country. Earlier, persons from Ghana, Sierra Leone, Sri Lanka and Hong Kong have visited India, West Africa, Malaysia and East Africa under this programme. Programmes can be supported in any of the following categories and there are no prescribed rigid rules for this award :

- (a) the attachment of a staff member, either academic or administrative, to a university in another developing country in the Commonwealth, to obtain greater experience and training;
- (b) the provision for a member of university staff of an opportunity to make a short study tour of other Commonwealth developing countries to enhance his ability to contribute to national development;
- (c) visit by a staff member to a university in another developing

country with a particular developmental objective in mind.

The competition is not necessarily limited to candidates holding established positions on the staff of a university or Secretariat. The A.C.U. will be prepared to consider applications for the support of a graduate or advanced student whose research project or training programme had a particular developmental objective. Further detailed information can be had from the Secretariat of the Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF by March 31, 1977.

Need for fundamental research

Mr. C. Subramaniam, inaugurated the international conference on Frontiers of Theoretical Physics at NPL Auditorium recently in New Delhi. In his inaugural address the Union Finance Minister emphasised that the economic growth with social justice could be accelerated in rural areas only through exploitation of natural resources by rural manpower through appropriate technology. The government had a positive policy to encourage fundamental research in pure sciences. Our achievements in this field have been notable. Mr. Subramaniam said that critics frequently question the wisdom of developing countries investing on fundamental research. But this was obvious that without pure science there could be no developments in applied science and no possibility of evolving new technologies in future. But a question might be raised whether the pursuit of pure science should be encouraged only because it would lead to discoveries which would be of relevance to the development of the country. Did Aryabhatta, Bose, Einstein and Raman pursue science with this ulterior motive? Prime motivation for scientific research has been the desire to understand nature. It is an urge that just as art and literature lifts man above animal, it is an

enterprise of the human spirit. It enriches and ennobles humane life Surely pure research is worth pursuing even for its own sake.

The pace of development of fundamental research depended largely on the extent to which young talent was drawn into this field and was provided with an environment in which their mental faculties were enabled to develop to their full potential. The optimal results would flow only if the follow-up activities were carefully planned and properly implemented. This aspect should be kept in mind by those in charge of the universities which were the best places for carrying out fundamental research.

Today India had the third largest scientific and technical manpower next only to the US and USSR. The impetus given to science after independence was almost entirely due to the foresight and practical wisdom of Pt. Jawaharlal Nehru. The Atomic Energy Commission, the chain of national laboratories and the large number of scientific and technological institutions owed their existence to him. Mr. Subramaniam said that the growth of science and the human spirit should go side by side. India with a rich tradition of spiritual thought could play a significant role to foster such an integrated development.

Teaching under the new pattern

Prof. B.M. Udgaonkar, Member of the University Grants Commission, in his keynote address at the National Seminar on Physics Education held in Ahmedabad said that colleges should be free to interpret teaching of at least part of the syllabi in their own way. He made a strong plea for special grants to be given to colleges with a spirit of innovation. He advocated more freedom in teaching methods to teachers and institutions. This was not possible if the syllabus continued to be rigid. He asked the teachers to introduce term projects and open-handed programmes among the

students to encourage their participation in academic activities.

Prof. Udgaonkar said that the new pattern of education offered excellent opportunities to bring about much needed changes in syllabi and the general mode of teaching. He suggested the introduction of more related sciences for the third year and said that the present water-tight distinction between the study of arts and science should be modified. It was necessary to bridge the gap between the world of study and world of work and work oriented courses could be introduced with the cooperation of industries situated in the neighbourhood. The number of teachers should not be reduced under the new system of education. The teaching community should be made responsible to innovation and should be encouraged to put in more work. The non-disciplinary courses of study should be broadened with the introduction of scientific methodology, elements of social economic life in India, contemporary world history and the liberation struggles in Asia, Africa and Latin America. The academic community at present was rather alienated from daily life and the introduction of such subjects in the curriculum would help both people and the teachers. He suggested common courses in Physics, Chemistry and Life Sciences for core-disciplinary programmes at the college level.

Reservation of seats in AFMC

The Central Government has announced reservation of ten seats out of a total of one hundred and twenty seats for admission of scheduled castes and scheduled tribes to the first year MBBS course at the Armed Forces Medical College, Poona commencing in July 1977.

The reserved seats will be in the non-stipendiary quota. Admission will be offered on the basis of combined merit of written and interview marks. Scheduled castes

and scheduled tribes candidates will have to qualify in the written test and come within zone to be called up for interview. They will have to come within the first 500 in the final merit list.

Scheduled castes and scheduled tribes candidates will also have to fulfil all other conditions and standards in terms of age, academic qualifications, medical fitness etc. as applicable to other candidates.

The reserved seats will be in addition to any vacancies secured by scheduled castes and scheduled tribes candidates on the basis of their position in the general merit list. If any scheduled castes and scheduled tribes girls are admitted against the reserved vacancies, the number of girls to be admitted against general seats will be reduced correspondingly so that the total number of girls is not more than twenty. All scheduled castes and scheduled tribes candidates will have to sign a bond to serve as short service commission officers in the Army Medical Corps on the same lines as applicable to other non-stipendiary students. In case scheduled castes and scheduled tribes candidates are not available to fill the reserved seats, candidates from the general list will fill up these seats.

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Aligarh centenary celebrations

The year long centenary celebrations of the Aligarh Muslim University started with the commemoration meeting held at the university. The meeting was attended by the alumni and the citizens of Aligarh in large numbers. Raja Mahendra Pratap, the freedom fighter and the oldest living alumni of the AMU was also present. Prof. A.M. Khusro, V.C. of the university in his address reiterated that the university would maintain its historical character while keeping its doors open to all communities. He said that the university was not a communal institution but had a definite cultural pattern of its own. It had produced some of the best talents in virtually all fields of life and it would continue to do so.

Tracing the history of the MAO College, Prof. Khusro said that after the first war of independence there were periods when there were differences between Hindus and Muslims and the founder of the institution Sir Syed Ahmad Khan worked to bring Muslims out of their self-imposed separation into the mainstream of national life. The message of the university on completing the first hundred years of its existence was that the tradition laid down by Sir Syed would be maintained. The basis of nationality was not religion but the homeland and equality of men of all castes and creeds was the university's motto. Prof. Khusro said that Sir Syed had all along felt that the Muslims had fallen behind by fifty years and had developed antipathy to advance customs and thinking and realised they could develop only if they caught up with the times. Indian universities at that time were still in transitional stage from dogmatic thinking to rational thinking. Prof. Khusro said that he will make all efforts to make the institution a pace setter in academic standards and to re-orient the pattern of courses to suit the country's requirements in technological and other fields.

Referring to the expansion plans of the university Prof. Khusro said that it was proposed to set up an institute of chemical engineering and petroleum technology for which the United Arab Emirate had agreed to provide Rs. one crore by way of financial assistance. The Union Education Ministry had also agreed to provide a recurring grant of Rs. eight lakhs for the institute. The departments of engineering geology and chemistry would provide the requisite infrastructure. The institute was being established with the concurrence of the Oil and Natural Gas Commission which would offer the necessary facilities for training the students in various aspects of drilling and petrochemical technology. The university also proposes to establish an agro-botanical complex over an area of 70 hectares of land near the old fort. The university has also a plan to construct a centenary hostel for the students.

devoted to more solid and constructive work than fun and frolic. The whole year will be utilised for intensive academic activities like the preparing of bibliography of research work done at the AMU, collection of works of Sir Syed and writing of biographies of the founder and other illustrious men and women of the university during the last hundred years.

Southern Vice-Chancellors' session

The conference of Vice-Chancellors of southern universities held at Trivandrum discussed the problems of university administration. Dr. Malcolm S. Adiseshiah surveyed the administrative organisation and procedures of Madras University which were examined by a team of the National Productivity Council and the Indian Council of Social Science Research. The various reforms in procedures, forms and

CAMPUS NEWS

The engineering faculty also proposes to set up an industrial complex. Various machines which lay unused after the day's work on the campus could be used by students for manufacturing different items needed by the railways and other industries. The university has also sought the assistance of the State Government to establish an industrial estate where enthusiastic entrepreneurs among students could start factories on commercial lines. The Nawab Azmat Ali Khan Trust has recently agreed to provide an annual grant of Rs. fourteen thousand for starting a programme to coach students wishing to appear in competitive examinations held by the Union Public Service Commission.

The year 1977 has been formally declared a centenary year

improved organisations resulting from the survey were commended. It was further suggested that every university may examine the possibility of undertaking similar surveys to effect economy in their expenditure.

The conference also discussed how the students who came to universities for higher education can be prepared to play their part in the programme of integrated rural development which consisted of improved agricultural practices, modernised cottage and village industries, rural health, nutrition and sanitation, universal literacy and family planning. The conference recommended that each university must make its contribution through its students in meeting the many sided problems of poverty and illiteracy through

their own faculty members, scientists and technologists, medical and agricultural students.

In regard to postgraduate education the conference suggested that the problems faced by the affiliated colleges be examined closely and recommended that the universities should follow strictly the UGC guidelines in this regard. It further recommended that the UGC teacher-fellowship scheme should be fully utilised. Reviewing the academic work of university departments, the conference recommended a system of annual assessment of each university teacher starting with a self assessment by the teacher concerned and being completed by his hierarchical supervisor. Such a system of assessment could be supplemented by the Vice-Chancellor by inviting external experts to review the work and achievements and problems of each department. It also recommended that no new university department should be started without a provision of Rs. three to four lakhs for the purchase of books and periodicals.

With regard to the varying duration and content of courses, the number of courses and nature of examination, being followed in postgraduate and M.Phil courses in south Indian universities, the conference called the attention to the danger of the non-comparability between the courses in different universities in southern India and the difficulties arising therefrom for the free movement of students. It appointed a committee under the chairmanship of Shri Chittibabu to examine the matter further.

The conference also reviewed the various problems connected with 10+2+3 pattern of education and made the following recommendations: (a) While preparing the courses for 10+2+3, the NCERT should include studies in Logic, Ethics and Psychology at the +2 level which has now been overlooked; (b) NCERT should clarify the starting point of the study of English at the school level as its publication in one place refers to

such a starting point in the south Indian schools at Standard IX, whereas in Kerala, Andhra Pradesh and Karnataka the starting point is at Standard V, and in Tamil Nadu at Standard III; and (c) In the light of the new 10+2+3 pattern, the length of the professional courses for engineering, medicine, agriculture and related sciences has to be examined de novo. It also decided to raise this question at next annual meeting of the AIU.

The conference also discussed the question of selection of teachers. It was felt that the composition of selection committees is a very important factor influencing selections and therefore the subject experts invariably should be from outside the region and may be taken from the UGC panels of experts. The inclusion of a syndicate member in the selection committees of certain universities seemed to be somewhat unacademic.

Seminar on technical literature in Sanskrit

The Department of Sanskrit of the University of Kerala organised a three-day seminar on Technical Literature in Sanskrit. Papers relating to technical Literature in Sanskrit like medicine, astronomy, architecture, music, dance, law, polity, civil engineering, physiognomy etc. were presented to the seminar.

Dr. R.S. Krishnan, Vice-Chancellor of the University, inaugurated the seminar and Prof. Samuel Mathai presided at the valedictory function. More than fifty teachers from different colleges of the Universities of Kerala and Calicut participated in the seminar which evoked keen interest among the teachers to take up research in technical literature instead of confining their work in the conventional study of classical literature. Dr. S. Venkitasubramonia Iyer of Kerala University was the Director of the seminar.

It is a matter of common knowledge that Sanskrit in addition to its well known and vast literature on poetry and drama and religion and philosophy has a vast store of writings on technical subjects like astronomy, medicine, architecture, music and dance, law and polity. Only a small part of the literature has been published and a lot more remains in manuscript. Isolated studies have been made by a few interested scholars here and there but no detailed and systematic examination has been done so far though a few books have also appeared showing the advancement of our ancients in many of the spheres. The seminar therefore recommended to the State Governments and the Central Government to undertake the collection of manuscripts of Sanskrit work on technical subjects, set up a body of scholars who are experts in technical literature for the preparation of a comprehensive bibliography of the technical literature in Sanskrit and research for the preparation of separate dictionaries in each technical subject and starting of a centre of advanced study in Sanskrit at Kerala University.

Unviable colleges

Dr. Malcolm S. Adiseshiah, in his valedictory address of the decennium celebrations of the Madurai University said that he was in full agreement with the policy of the Central and State Governments that no new college be started in the Fifth Plan and all private and public resources should be used for strengthening the "over extended existing colleges and higher education facilities"

He said that our higher education record in the recent past had not conformed to the canons of elementary prudence, because they had gone about starting colleges for the sake of perpetuating someone's revered memory or paying tribute to a living person on the one hand, or in the name of equalising higher education opportunities as between different districts and

even blocks and the democratisation of higher education. They were worthy objectives but a number of unviable colleges have been started which needed correction. It would be better if the perpetuation of the name of a person or that of the community or caste was done by strengthening the existing colleges and educational institutions by endowing scholarships and lectureships. As for equalising higher education, Dr. Adiseshiah said he did not think that at this stage of our national and State development they could recognise higher education as the right of every block and taluka. The most substantial reason for our collegiate disarray was the democratisation of higher education and opening up of the gates of higher education to those who had been denied and deprived of it in the past. The priority objective may require the opening of a few carefully planned and selective colleges but even more it requires making staff and financial provision by way of hostels and scholarships in the existing colleges so that we do not continue with the criminally wasteful under-utilisation of our higher education capacity. To accommodate more students, he suggested that the existing colleges work twelve hours by shifts instead of limiting them to five hours a day.

Bombay's new 3-year integrated degree programme

The introduction of the new pattern of education has provided a unique opportunity to the universities to restructure their courses so that higher education has social relevance and is interdisciplinary in nature. Prof. T.K. Tope, Vice-Chancellor of Bombay University has taken a lead in this matter. He has appointed different committees in the Faculties of Arts, Science and Commerce to discuss the restructuring of the courses. Teachers from the university departments and the colleges as well as industrialists and business experts participated in these deliberations. The Acad-

emic Council of the university after prolonged discussions adopted a scheme under the new pattern of higher education. Some of the distinguishing features of this programme are : (i) introduction of two foundation course papers in three Faculties of Arts, Science and Commerce; (ii) introduction of applied component group of subjects; (iii) introduction of Life Sciences as a subject in the Science Faculty; (iv) introduction of a five-paper course in Law in the Faculties of Arts and Commerce; (v) introduction of (a) a five-paper course in Commerce, and (b) a five-paper course in Area Studies in the Faculty of Arts; (vi) introduction of a five-paper course in Rural Development in all the three Faculties of Arts, Science and Commerce.

The Boards of Studies in different subjects are now busy in framing detailed syllabi for giving a concrete shape to the above scheme. Committees are also considering the linking of education with work experience and productivity as suggested by the University Grants Commission.

The new courses in the Faculties of Arts, Science and Commerce under this pattern would have two papers on foundation course which will deal with the following topics : (i) (a) elements of contemporary social and economic life; (b) contemporary african and asian civilisation; (ii) (a) scientific methods; (b) development of science and technology. In the case of science students, the second paper would however be on history, methodology and philosophy of science.

Various subjects have been introduced under the category of applied component group. The object of introducing these subjects is to enable the student to equip himself with the knowledge of socially relevant subjects, in addition to his academic subjects. Provision has also been made to teach Sanskrit as a fresh language in the three-year degree course in Arts. The Boards of Studies in modern languages are exploring the

possibility of introducing subjects such as Sanskrit Poetics and Etymology in the syllabi for all modern Indian languages. The Boards of Studies in Languages have been asked to explore the possibility of including Comparative Literature, Aesthetics and Linguistics as papers in language studies. The Faculty of Science has adopted an integrated approach towards the study of Botany and Zoology. The subject of Life Science is being introduced at the first degree level. It is further recommended that after a period of five years Botany and Zoology will not be taught as separate subjects but there would be an integrated approach to the study of these subjects.

Computerised flood control system

A team of experts from the Indian Institute of Technology, Madras, have worked out a programme of computerised flood forecasting and control which will not only save the country crores of rupees in terms of hydel electricity and increased irrigation, but also mitigate the sufferings in flood-prone areas. The irrigation department of Madhya Pradesh had entrusted the work to the IIT as a consultancy assignment. The team was headed by Dr. S. Ramani, Professor of Industrial Engineering and Management. The objectives of the study were : (1) Development and testing of a digital flood simulation model for the Gandhi Sagar catchment. The model had to be based on well proven hydrological ideas and the structure of the model being guided by the comprehensiveness, exhaustiveness and accuracy of available data; (2) Codification of the prevailing Indian meteorological departments (IMD) warnings and the estimation of corresponding flood hyetograph at the reservoir ; (3) Development of a computer programme for routing a specified flood through the reservoir for specified gate opening sequence; and (4) Linking up of the above three items in order to evolve a package, which would

accept the four-hourly rainfall data through the progress of a storm and superpose the effects of IMD forecast and estimate the corresponding components of the inflow into a reservoir based on specified operating schedule which will digitally route the flood through the reservoir, thus indicating the consequence of that particular operating policy on ensuing flood situation.

Dr. Ramani said that if a reliable flood forecasting system was available, it would be possible to permit higher levels in the reservoir without increasing the risks involved. The basic premise was that there should be sufficient advance warning which would permit lowering of the reservoir level to just the safe enough level to accommodate the probable maximum flood before the flood impugned the reservoir. The object of the programme was to maximise the storage of water at the end of the monsoon season for a given risk of dam overflow.

The Gandhi Sagar dam was completed in 1960. It is the upper most dam in the series of three dams and a barrage comprising the Chambal Valley development project. Two of the lower dams are located in Rajasthan. Because of severe inadequacy of spillway, floods of much higher intensity and volume have taken place at the Gandhi Sagar dam compared to the preliminary estimates. It has therefore been considered necessary to maintain a considerably low reservoir level for consumption purposes after providing for anticipated flood waters.

Panjab introduces grading

The Panjab University has decided to introduce the grading system of examination at the postgraduate level in the subjects of Geography, Sociology, Statistics, Psychology, Ancient Indian History, Culture and Archaeology and Public Administration. For these courses the semester system has also been introduced. The

university authorities propose to gradually extend grading system of evaluation to other departments as also at the undergraduate level.

The university has adopted a seven-point scale for grading. The candidates who secure in a subject or paper 70 per cent of the marks or above will be declared "outstanding" (O grade). Those getting between 60 and 69 per cent of marks will be categorised as 'veey good' (A grade) and those with 50 to 59 percent marks will get the B grade. The remaining grades are : C grade (Fair) 40 to 49 per cent marks; D grade (Satisfactory) 33 to 39 per cent marks; E grade (Poor) 25 to 32 per cent and F grade (Very Poor) up to 24 per cent marks. The grading system will be beneficial to the candidates as it will minimise the element of subjectivity which dominated the old system of evaluation. The examination reforms unit of the university has been working for the last two years and on the basis of its recommendations the grading system has now been adopted.

PAU farm research centres

The Punjab Agricultural University proposes to establish farm research centres. Dr. Amrik Singh Cheema, the Vice-Chancellor said that farm production in Punjab had practically reached the saturation point and it was now necessary to find out ways and means to reduce the cost of farming to carry lasting benefits to the farmers. The university has therefore decided to try an experiment on a 100-acre farm to produce a new variety of paddy two or three months ahead of the scheduled season by using a new seed. This seed would be sown by the end of March and the new crop is expected to be ready by the middle of July. The university would also establish at the district level virus free plant nurseries to benefit the farmers. They would also conduct fortnightly camps twice or thrice a year separately for wheat and rice.

Dr. Cheema emphasised the need for integrated rural development for which funds could be obtained from the world bank. In the existing situation soil and water management should be done at the village level and to carry the benefit of research to the doors of farmers it was necessary to establish farm research centres at the district levels.

New industrial chemistry course

A new course in industrial analytical chemistry would be started in Gujarat University from June, 1977. The course would fulfil the requirements of industries. Hitherto, students who had gone through normal chemistry courses used to take time to adapt themselves to the job requirements when they joined industrial units.

According to Shri I.J. Patel, Vice-Chancellor of the University, the industries would also be involved with the training of students. They have agreed to allow the university students to have their practical training in the various industrial units. Mr. Bhagubhai Chandulal's family has donated Rupees five lakhs for the institution of this course. The foundation stone for the building to house the department has already been laid in Ahmedabad. More donations and grants from government are expected to be received for this purpose.

Madras colleges for semesterised courses

The committee of principals of Madras University has recommended that in all colleges the courses should be fully semesterised from 1977-78 and the student strength in each class be fixed uniformly at fifty. The semester examinations for both undergraduate and postgraduate classes should begin by the first week of November and middle of April every year. The committee has also recommended that the present arrangements for

conducting the PUC practical examinations should continue for the present. The committee has suggested to the Boards of Studies to reduce the number of papers for university examinations. It has been further suggested that the marks of community and social service be increased from one hundred to two hundred and no minimum pass marks be prescribed and the colleges be permitted to collect a fee of Rupees ten per semester for community service work.

Ewing college celebrates platinum jubilee

Ewing Christian College, Allahabad, is celebrating its Platinum Jubilee Year. Dr. B. Malik, former Chief Justice of Allahabad High Court and former Vice-Chancellor of Calcutta University was the chief guest at the inaugural function. The college is one of the oldest educational institutions of Uttar Pradesh. Dr. Henry Ewing established the institution in 1902. The college provided BA, BSc. and M. A. courses. Teaching at the degree level was however suspended after the reorganisation of the Allahabad University in

1923. The undergraduate courses were restored to the college in the early 1950s.

The college has always supported innovative ideas in education. It started in 1932 the first audio-visual department and was among the first few colleges to introduce co-education in 1935. Modern examination methods were brought into the classes with the introduction of objective type testing in 1950. The college has been selected by the University Grants Commission as one of the first colleges to have the college science improvement programme. This was followed in 1975 by the college humanities and social sciences programme. These two programmes are helping to make education in college more relevant to modern day problems and needs of students. Changes in the college curricula and organisation were planned by Principal Job and the members of the faculty. Emphasis has to be paid on individual development of students, staff and community and their involvement in the college affairs will be encouraged. World awareness and community service will be fostered so that there is better international understanding of staff and students. Innovation in

teaching methods would provide better teaching. There will be emphasis on new pattern in management which will provide for greater staff and management involvement in decision making and planning. Efforts would be made to make the various courses of greater academic relevance. More autonomy would be given to the teachers of the college so that they have freedom to plan relevant studies and to adapt learning to the present needs of students and of nation. The sad and premature demise of Principal P.S. Job has brought a serious setback to all these activities.

Personal

1. Dr A. S. Cheema, Vice-Chancellor, Punjab Agricultural University, Ludhiana has been appointed a member of the University Grants Commission for a term of three years.

2. Dr. Amitabh Bhattacharyya Director, IIT, Kanpur has been re-elected President of the Institution of Engineers (India) for the year 1977.

3. Dr. A. S. Raturi has been appointed Vice-Chancellor of Rohilkhand University.

Examination Reforms

(Contd. from Page 79)

graduate level, the undergraduate students being still under the annual scheme. This dichotomy has adversely affected the teaching. The internal tests—four times for the two semesters in a year—and the semester examinations have helped impede the tempo that is gained in continuous teaching. It is, therefore, suggested that semester system be introduced also at the undergraduate level so as to achieve uniformity at all levels. And the internal test system should be remodelled. For instance, we can think on the lines that there is five day teaching in a week, and one day is set apart for tests when internal tests in one or two subjects could be held in rotation. This will certainly be an improvement over the existing arrangement inasmuch as it will not impede the tempo of work.

Finally, in the present scheme, there is no provision for viva-voce at the undergraduate level. It is suggested that twenty per cent marks should be assigned to viva voce in each paper. It could be conducted on the

same day after the written examination is over, and should be taken by at least two teachers of the department concerned of whom one should be the teacher of the subject himself. However, in order to maintain uniformity throughout the university, the viva paper may be set and sent to each college by the university like a paper of science practicals. The viva may be held in the form of group discussion among ten students. The discussion may be presided over by one of the teachers, and the marks awarded then and there in the presence of the candidates. The average of the two teacher-examiners may be worked out and added in the score of the candidates. A tape recorded account of the proceedings of the viva may be kept for the purposes of scrutiny later on, should there be any complaint by a candidate. Dispensing with secrecy will help solve many a problem that has to be faced by the university now.

—J.N. Sharma
Raj Rishi College, Alwar

Karnataka cuts capitation fee

As a first step in removing the evils of capitation fee system for medical education, the Karnataka Government has ordered reduction in the capitation fee from Rupees ten thousand to Rupees five thousand for domiciled students and fixing a maximum of Rupees thirtyfive thousand for non-domiciled candidates. The State Health Minister, Mr. H.M. Channbasappa said in Bangalore that the quota of seats allotted to the managements of private medical colleges has also been reduced. The reservation of seats for backward classes would however continue and their payment of capitation fee would be made by the Government. 28% of medical seats have been reserved for students belonging to the educationally and socially backward classes. A committee of three nominees, each from the government and the managements would be appointed by the Government for screening the admissions to the medical colleges. The Chairman of these committees would be appointed by the Government.

Additional funds for varsities

The University Grants Commission has decided to provide additional assistance to universities for books, journals and equipment in cases where funds already provided in the Fifth Plan period have been utilised. The Commission has also urged the State Governments to ensure that matching contributions are provided for implementing the Fifth Plan proposals to the universities wherever necessary and that the posts sanctioned by the Commission till 1980-81 are continued as committed expenditure.

Weed Science conference meets at Hyderabad

The Andhra Pradesh Agricultural University organised a four-

day all-India conference in collaboration with the Indian Society of Weed Science to analyse the present status of weed science in the country and to define its future role in modern agriculture. Dr. R.W. Cummings, Director of International Crop Research Institute of Semi-Arid Tropics, inaugurated the conference. Prof. N.Gopalkrishna, Vice-Chancellor of Punjabrao Krishi Vidyapeeth presided over the conference. Over two hundred delegates from all over the country and abroad participated in the conference. About two hundred research papers were presented at nine technical sections. On this occasion an exhibition depicting the various weeds and weed control measures was organised at the Agricultural College, Rajendranagar.

Various projects sponsored at Jammu

A number of all-India organisations have sponsored thirty research projects of fundamental importance in Jammu University. The most prestigious of these projects pertain to the study of phenomena in higher energy physics. Another project is on crystal structure analysis. The CSIR has allotted a project on characterisation of clay minerals

for use in textiles, rubber cement and ceramics. The University Grants Commission has also sanctioned a thirty lakh rupee computer for the university which will be installed soon. The Indian Council of Agricultural Research has allotted another project on survey of high altitudes vegetation for edible elements.

The university is also conducting researches in geological investigations of the Gulabgarh area in the Jammu region with the help of the Geological Survey of India.

Computer for Pune Varsity

A third generation computer made in the United Kingdom will be installed in Pune University. The computer is meant for the use of educational and research institutes in the western region including the defence units. The ICL 1904 model computer would cost around rupees eighty lakhs. The university would establish separate cell for administering the computer centre as it would have to cater to the needs of several agencies. The University Grants Commission and the Union and State Governments have provided grants for the purchase and maintenance of the computer unit.

Subscription Rates

Period	Inland (Rs.)	Abroad	
		Surface (Rs.)	Air (Rs.)
1 year	16.00	80.00	140.00
2 years	30.00	150.00	260.00
3 years	44.00	220.00	360.00
5 years	72.00	350.00	550.00
Single copy	00.80 ps.	4.00	8.00

**GURU NANAK DEV UNIVERSITY
AMRITSAR**

Advertisement No. 1/77.

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self addressed stamped envelope of 23x10 cms. so as to reach this office by 23.2.1977 alongwith Indian Postal Order (s) for Rs. 7.50 for posts at Sr. No. 1 to 3 and Rs. 5/- for posts at Sr. No. 4 & 5, drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable. Grade (plus allowances as admissible under rules).

1. Professor of Chemistry (Rs. 1500-60-1800-100-2000-125/2-2500).
2. Dean of Colleges (Rs. 1100-50-1300/60-1600/100-1800).
3. Lecturers in Uadu for Guru Nanak Studies Department. (Project: Translation of Sri Guru Granth Sahib into Urdu) Rs. 700-40-1100-50-1600).
4. Research fellows in Economics, Psychology and Punjabi Language, Literature & Culture (Rs. 400/- P.M. fixed).
5. Electrician for Guru Nanak Dev University Evening College, Jullundur (Rs. 110-3-140).

Qualifications:

For post at Sr. No. 1:

- (i) A Doctor's Degree or published work of an equally high standard;
- (ii) Consistently good academic record with First or High Second Class (B plus) Master's Degree in Chemistry or an equivalent Degree of a foreign University;
- (iii) About ten year's experience of teaching M. Sc. Classes and guiding research;
- (iv) Considerable experience of research in Oils and Fats of applied nature and teaching experience of Post-graduate classes in Applied Chemistry especially Chemical Engineering, Oils, Soaps & Detergents etc. will be preferred;
- (v) Knowledge of Punjabi and a foreign language other than English will be an additional qualification.

For post at Sr. No. 2: Essential :

- (i) At least Second Class Master's Degree;
- (ii) A minimum of 5 years' experience of academic administration preferably as Principal of a College.

Desirable :

- (i) Experience of Principalship of a Post-graduate college;
- (ii) Rich experience of guiding, supervising and controlling extra-curricular activities, such as N.S.S., N.C.C., sports, cultural and other Youth Welfare activities etc.;
- (iii) Intimate knowledge of managerial financial and administrative pro-

blems of colleges and of the relationship between affiliated Colleges and an affiliating University.

For posts at Sr. No. 3:

- (i) A Doctor's Degree or published work of an equally high standard in Urdu;
- (ii) Consistently good academic record with First or High Second Class (B plus) Master's Degree in Urdu or an equivalent degree of a foreign University;
- (iii) Experience of translating high medieval Punjabi or Hindi Literature into Urdu
- (iv) Knowledge of Punjabi and Sikh Scriptures. Desirable : Proficiency in Sanskrit/Hindi/Persian.

INDIAN SCHOOL OF MINES

DHANBAD-826004

Adv. No. 420006/77

Dated February 8, 1977

The Indian School of Mines, "deemed" to be a University under the University Grants Commission Act, invites applications for the undermentioned posts:

I. Central Library:

- 1) Three Senior Scientific Assistants/Senior Professional Assistants in the (revised) pay scale of Rs.550-900/- (Permanent).
- 2) Two Scientific Assistants/Professional Assistants in the (revised) pay scale of Rs. 425-700/- (Permanent).

II. Deptt. of Applied Geophysics:

- 3) One Senior Technical Assistant (Electronics) in the (revised) pay scale of Rs. 550-900/- (Temporary for one year).
- 4) One Technical Assistant (Electronics) in the (revised) pay scale of Rs. 425-700/- (temporary for two years).

III. Executive Development Centre :

- 5) One Technical Assistant (Draughtsman) in the (revised) pay scale of Rs.425-700/- (Permanent)

Besides pay, ISM employees get allowances as admissible to Central Government employees.

Age Limit: 30 years for Scientific Assistants/Technical Assistants/Professional Assistant and 35 years for Senior Scientific Assistant/Senior Professional Assistant, relaxable for certain categories of candidates.

Further details and prescribed application forms are obtainable from the Registrar, Indian School of Mines, Dhanbad-826004 on sending a self addressed envelope of size 29 cm x 12 cm, affixed with postage stamps of the value of Rs. 2.65 paise only. Completed application forms should reach the Registrar on or before **March 7, 1977**

Canvassing in any form will be treated as disqualification.

**M.S. RAMAMURTHY
REGISTRAR**

Note : Established creative writers, with thorough knowledge of Sikh Scriptures/Punjabi/Hindi, who do not fulfil all the prescribed conditions may be considered, if persons with requisite qualifications are not available.

For posts at Sr. No. 4 :

- (i) First or High Second Class Master's Degree in a subject concerned with good academic record;
- (ii) Aptitude for research.

For post at Sr. No. 5:

- (i) Matriculation with 2 years certificate course of Electrician from the I.T.I. or any other recognised Institution;
- (ii) Should possess wiring/electrician Licence from Chief Electrical Inspector, Punjab;
- (iii) Experience in operation of Sub-Station, internal electrical wiring and overhead mains shall be preferred.

Bharpur Singh
REGISTRAR

ANDHRA UNIVERSITY

Advertisement

Applications in the prescribed form are invited for the following posts so as to reach the Registrar, Andhra University, Waltair, on or before 28.2.1977. Each application shall be accompanied by a crossed Indian Postal Order for Rs. 10/- (Rupees ten only) or a Bank receipt remitting that amount in the State Bank or India to the credit of A.U. General Account (Ordinary) towards the Registration Fee for the application :

Scales of Pay:

(a) For the posts in the Faculties of Arts, Science and Social Sciences:

Professor : Rs. 1500-60-1800-100-2000
Assesment-125/2-2500

Revised Scale

Reader : Rs. 1200-50-1300-60-1900

Revised Scale

Lecturer : Rs. 700-40-1100-50-1600

Revised Scale

(b) For the posts in the Faculty of Engineering :

Professor : Rs. 1100-50-1300-60-1600

Reader : Rs. 700-50-1250

Lecturer : Rs. 400-40-800-50-950

The details of qualifications prescribed (Revised qualifications are prescribed for the posts of Lecturers in the faculties of Arts, Sciences and Social Sciences) in respect of each post including the particulars and precise branch of specialisation which is needed and also the preferential qualifications considered desirable will be furnished along with the application form.

The rule of reservation for SC/ST/BC candidates is applicable for the above posts.

Requisition for the application forms may be made to SRI P. HANUMANTHA RAO, DEPUTY REGISTRAR, ANDHRA UNIVERSITY, WALTAIR, accompanied by a self addressed and stamped envelope and a State Bank of India Challan or Crossed Indian Postal Order for one Rupee. The University reserves the right to fill or not to fill all or any of the posts. The cover containing the applications should be superscribed as "APPLICATION FOR APPOINTMENT TO THE POST OF....."

M. Gopalakrishna Reddy
REGISTRAR

PUNJABI UNIVERSITY, PATIALA

(Advertisement No. 113/PRO/Estt./77)

Applications are invited for appointment to the following posts :—

1. (a) Professor of Education and Community Services.
(b) Professor (Chair in Sufism).
(Grade : Rs. 1500-60-1800-100-2000-125/2-2500).
2. Reader in Religious Studies (one),
Reader in Anth. Linguistics (Two) and
Reader (Co-ordinator) in English (one)
(Grade : Rs. 1200-50-1300-60-1900).
3. Lecturer in Journalism (Grade : Rs. 700-40-1100-50-1600)
4. Associate Director (one each in the subject of English, History & Political Science) (Rs. 1200-50-1300-60-1900).
5. Assistant Directors (two each in the subjects of English, History, Political Science. (Grade : Rs. 700-40-1100-50-1600).
6. Senior Research Fellow in Sri Guru Granth Sahib Studies (Rs. 400-40-800/50-950).
7. Research Fellow in Research Centre in Physical Education (Grade : 400-40-800/50-950).

Qualifications

- (a) A Doctor's degree or published work of an equally high standard in the relevant subject and
- (b) Consistently good academic record with Ist or high second class (b+) Master's degree in the relevant subject or an equivalent degree of a foreign University or atleast second class M. Ed. degree in case of the post of Professor of Education and first class Master's degree in Persian and Punjabi in the case of Professor for Chair in Sufism.
- (c) Qualifications prescribed in (b) above are relaxable in case the research work of the candidate, as evident either from his thesis or from his published work, is of a very high standard. For the posts at Nos. 3 and 5 to 7 if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable, a person possessing consistently good academic record (due weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed on the condition that he obtains a Doctor's degree or gives evidence of published work of equivalent high standard within 5 years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.
- (d) Ten/five years' experience of teaching the post-graduate classes I and

SUBJECT	PROFESSOR	READER	LECTURER
1. Environmental Sciences (New Energy system)	1	—	—
2. Human Genetics & Physical Anthropology	1	1	—
3. Botany	—	1	—
4. Bio-Chemistry	—	1	—
5. Civil Engineering	—	1	—
6. Mechanical Engineering (Part-time B.E.)	1 (Temp)	—	—
7. Marine Engineering	—	1 (Temp)	—
8. Geophysics	—	—	2
9. Sociology	—	—	1
10. Chemical Engineering	—	—	2 (Temp)

guiding research for the post of Professor/Reader, Reader (Co-ordinator) and Associate Director respectively.

Additional Qualifications

Professor of Education & Community Services

Good-knowledge of University educational problems.

Professor (Chair in Sufism)

- Published works and research articles on mysticism with special reference to Sufistic and Gurmat traditions;
- Experience of guiding research work and editing literary magazines;
- Good knowledge of Urdu and Arabic.

Reader in Religious Studies

The qualifications in (a) and (b) above should be in Religious Studies/Philosophy/History with specialization in Sikh Religion. Candidates should be able to teach at the M. Litt. level and to guide research. Familiarity with major religious traditions of the world essential. Proficiency in Sanskrit and/or Persian will be an additional qualification.

Readers in Anth. Linguistics

Structural Semantics or Discourse Analysis at Doctoral level and post-doctoral research.

Reader (Co-ordinator) in English

Persons having taught Literary Criticism or Twentieth Century English Literature will be given preference.

Lecturer in Journalism

- The degrees in (a) and (b) above should be in the subject of Punjabi;
- Degree or Postgraduate Diploma in Journalism;
- 7 year's professional experience in a responsible capacity in editing and production of Punjabi newspapers, magazines and publications.

Associate Director in (English)

Specialization in Criticism/20th Century English Literature.

Associate Director (History)

Specialization in the Modern Indian History.

Associate Director & Assistant Director (Political Science)

Specialization in International Politics, Indian Political Thought, Modern Political Analysis, Political Development will be preferred.

Assistant Director (History)

Specialization in Ancient Indian History for one post and Punjab History for the other.

Desirable :—A few years teaching experience in any field of non-Indian History (both for Associate/Assistant Directors.

Note : For posts of Associate/Assistant Directors

- Persons with experience of Correspondence Courses will be given preference.
- Those who have already applied for the posts of Associate Directors and Assistant Directors in the subjects of English, History and Political Science in response to advertisement No. 90/SPS/Estt. & No. 101/SPS/Estt/76 need not apply afresh.

Senior Research Fellow in Sri Guru Granth Sahib Studies.

Qualifications in (a) and (b) above should be in English/Philosophy; good knowledge of Sikh scriptures and sacred literature; some knowledge of the Indian Philosophy. Experience of translating into English from Punjabi preferable; experience of correcting press proofs.

Research Fellow in Research Centre in Physical Education.

Qualifications in (a) and (b) above should be in bio-chemistry.

8. Research Fellow in Sri Guru Granth Sahib Studies.

(Grade : Rs. 300-25-350-EB-25-400-30-610-EB-30-640-40-800)

M.A. at least second division (b+) in Hindi/Sanskrit/Punjabi; well-versed in Sikh Scriptures; some knowledge of Indian Philosophy; experience of preparing gloss; experience of writing lessons for the correspondence courses.

9. Research Fellow in Botany Deptt. (Rs. 500/-p. m. all-inclusive)

Ist class M.Sc. in the subject of Botany with two years research experience. Persons having experience of undertaking botanical excursions in connection with their research work on wild plants in the field of Cytology and Morphology will be preferred.

10. Technical Assistant

(Grade : Rs. 160-10-280/15-400).

At least Matriculate with diploma in Mechanical /Electrical Engineering of recognised institution. Persons having knowledge of handling and repairing of Scientific equipments such as microscopes, waterbaths, mycotomes, ovens etc. and having experience of working in Biological Laboratory of a University will be preferred.

General Administration

11. Superintendent (Rs. 500-900)

Qualifications

B. A. with at least 10 years' service

in a Government/University/affiliated college office, at least 3 years of which shall be in a capacity of Dy. Superintendent or on a higher post;

12. Model School

Music Mistress (Rs. 220-500)

Essential Qualifications

- B. A. Ist class in Vocal Music from any recognised University;
 - At least IInd class B. Ed., with Music as a special subject;
- OR
- 2nd class M. A. in Vocal Music.

Preferential

Some knowledge of instrumental music, dancing, ability of composition and organising functions.

13. Junior Research Fellows (U. G. C.) in Botany and Geography (Rs. 400/- p.m. all inclusive for first two years and Rs. 500/- p. m. all inclusive for subsequent two years).

Qualifications :

Junior Research Fellowship is open to persons preferably below the age of 30 years who have at least one year's teaching/research experience after obtaining Master's degree in the relevant subject in the first or second class. Provided that in the case of first class M. Sc. the condition of one year's experience may not be insisted upon. Provided further that the condition of one year's research/teaching experience may be relaxed with the sanction of the Vice-Chancellor in the case of 2nd class M. Sc. having at least 55% marks each in B.Sc. and M.Sc. examinations and also where the Selection Committee is satisfied about the research potential of a candidate and no first class M.Sc. is available.

General for all

Higher start within the grade admissible depending upon the ability and experience of the candidate.

House rent and Dearness Allowance, Provident Fund and Medical facilities according to University rules, except the post at Sr. No. 9 & 13.

Applications complete in all respect on the prescribed forms accompanied by a crossed postal order worth Rs. 5/- (Rs. 2/- for candidates belonging to Scheduled Castes/Tribes and backward Classes) drawn in favour of the Registrar, Punjabi University, Patiala, should reach the University by 1.3.1977. The forms can be had from the Superintendent (Establishment) by sending a self-addressed envelope of the size of 23 x 10 cms. stamped with 25 paise postage.

Persons already in service should apply through proper channel. Govt. servants who are not in a position to submit their applications through proper channel before the due date should submit an advance copy before the due date and regular applications through proper channel by 5.3.1977.

Gurpartap Singh
REGISTRAR

Advertisement No. 5/77

Applications are invited for 15 (Fifteen) posts of Professors, Assistant Professors and Lecturers in the Department of Electrical Engineering. The department is seeking individuals with ability and aptitude for teaching research and development.

1. Professor : Scale of pay Rs. 1500-60-1800-100-2000-125/2-2500.

Qualifications :

Doctorate degree with an excellent academic record with at least 8 years of professional experience of good quality outside the work for the degree

OR

M. Tech. degree with excellent academic record and 15 years of industrial experience with brilliant record, outside the work for the degree.

The candidates must have demonstrated ability in teaching and independence in research evidenced by significant contributions by way of publications of good quality in journals of repute or developmental projects work of merit in any one of the following areas :

(i) Power Systems, (ii) Electronic Circuits, (iii) Electronic Devices, (iv) Communications (v) Computers, (vi) Controls, (vii) Power Electronics, (viii) Networks and Systems.

2. Assistant Professor : Scale of Pay Rs. 1200-50-1300-60-1900.

Qualifications :

Doctorate degree with excellent academic record with at least three years of professional experience

OR

M. Tech. degree with excellent academic record and at least seven years of industrial experience.

The candidates must have demonstrated ability in teaching, and independent research work as evidenced by adequate number of research publications of good quality in journals of repute or developmental project work in any of the following areas :

(i) Power Systems, (ii) Electronic Circuits, (iii)

Communications, (iv) Computers, (v) Controls, (vi) Power Electronics and (vii) Networks and system. Specialised experience in any one of the following is desirable. Power System Security and Reliability, High Voltage Engineering, Digital and Linear Circuit Design, Integrated Circuit Design, Device Modelling, Computer-aided Design, Active Networks, Instrumentation and Transducers, Digital Communication, Optical Communication, Signal Processing, Computer Architecture, Microprocessor Applications, Real Time Computer Control, Industrial Drives, Bioelectronics and Design of Heavy Electrical Machines.

3. Lecturers : Scale of Pay : Rs. 700-40-1100-50-1600

Qualifications :

Doctorate degree with excellent academic record

OR

M. Tech. degree with excellent academic record and at least three years of teaching, research/industrial experience.

The candidate must have ability for good teaching and independent research, evidenced by adequate publications or developmental work.

Areas of specialisation are the same as those mentioned above for Assistant Professors.

The Department of Electrical Engineering has, at present 35 faculty members and an active postgraduate programme with about 40 Ph D. students and 80 M. Tech. students. The Department is actively involved in sponsored research and development projects funded by Governmental agencies and Industry. There are well equipped laboratories including a semiconductor device laboratory with clean room facilities. The Institute also has a Biosystems Laboratory and Laser Laboratory. There is a well established Computer Centre having IBM 7044, IBM 1401, IBM 1800, PDP 1 and TDC-316 computers and a group of experienced programmers. In addition the following Central facilities are available.

Liquid nitrogen and liquid helium plants, NMR, EPR, Mass Spectrometer, X-ray Plant, UV and IR Spectrometers, Glass blowing shop, crystal growth facility, central instrumentation laboratory, precision machine shop, electron microscope, besides a large workshop

for the fabrication of specialised research apparatus. The Institute has a well stocked library with more than 1,00,000 volumes and 1300 periodicals.

The Institute has inter disciplinary programmes in the areas of Material Science, Computer Science, Nuclear Engineering etc. Candidates may be considered for, joint appointments with the inter-disciplinary programmes.

Excellent residential housing, when available is provided on campus. The campus facilities include a primary and a higher secondary schools, a health centre and a shopping centre. Besides there is a modern swimming pool.

In the category of Lecturer, one post will be reserved for SC/ST candidates. In the event of non-availability of SC/ST candidates the reserved post would be treated as dereserved.

Posts are permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum Gratuity Scheme or GPF-cum-Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year the appointment will be on probation. Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 cm.x10 cm. size. Applications should be accompanied by a postal order for Rs. 7.50 (Rs. 1.87 for Scheduled Castes/Tribes candidates).

Applicants from abroad may apply on plain paper enclosing a complete bio-data and names of three referees from whom reference letters may be obtained.

All applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016, U. P. (India) on or before 15th March, 1977.

A.I.U. Publications

(A) On Examinations :

1. The Management of Examinations :

Deals with various aspects of management of examinations, namely, mechanical aids/computer in examinations, anatomy of malpractices and unfair means and coping with them, grades vs. marks and certain other practical aspects of conduct and management of examinations.

Paperback... Rs. 35.00

Hardbound... Rs. 40.00

2. Question Bank Book Series :

Each title contains 5000 to 8000 questions/items of all categories, selection type (constant alternative, multiple choice, multiple facet, rearrangement, matching and supply type simple question/completion question, short answer question, long answer and problem solving question.)

01 Mathematics	Rs. 50.00
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05 Botany	Rs. 20.00
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08 Psychology	Rs. 25.00
09 Economics	Rs. 25.00
10 Commerce	Rs. 25.00

3. Monograph on Grading for Universities

contains experiences of very many grading workshops conducted by the A.I.U. at various universities.

Rs. 5.00

4. Monograph on Question Banking for Universities

brings to light the experiences of organising Question Banking Workshops by the A.I.U.

Rs. 5.00

5. Towards Better Questions (Item Writers' Cookbook)

deals with selection type items and supply type questions with scientific theory behind their construction, illustrative examples in all the major disciplines at the first degree level.

Rs. 5.00

6. Monograph on Internal Assessment

7. Monograph on Practical Examinations

8. Monograph on Test & Item Analysis

In Press

(Note :-Discount up to 40% admissible on bulk orders.)

(B) Other Publications :

1. Universities Handbook-1977

In Press

2. Handook of Medical Education-1977

Rs. 9.00

3. Bibliography of Doctoral Dissertations (1857-1970)

(i) Social Sciences

Rs. 50.00

(ii) Physical Sciences

Rs. 125.00

(iii) Biological Sciences

Rs. 100.00

(iv) Humanities

Rs. 100.00

(Also available in paperback in individual disciplines)

4. Association of Indian Universities—History

Rs. 50.00

5. Higher Education and Development

Rs. 30.00

6. Research in Progress (1958-1966)

Vol. 1 - Physical Sciences

Rs. 40.00

Vol. 2 - Biological Sciences

Rs. 35.00

Vol. 3 - Social Sciences

Rs. 32.00

Vol. 4 - Humanities

Rs. 50.00

For further details, please write to :
Association of Indian Universities
Rouse Avenue, New Delhi - 110002.

A List of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. Datta, Pratapchandra. The Harappans : A bioanthropological study of the skeletons discovered at Harappa. D. Sc. University of Calcutta.

Biochemistry

1. Basak, Ketaki. Studies on the biosynthesis of kanamycin. University of Calcutta.
2. Bera, Hasirani. Studies on several lysosomal enzymes in rat-brain tissues under the influence of physiological and nutritional alterations. University of Calcutta.
3. Bhattacharya, Alok. Studies on the mechanism of gene expression in yeast, *Candida Albicans*. Jawaharlal Nehru University.
4. Chattopadhyay, Jaba. Studies on the effects of various physiological factors on lysosomal enzymes and 1-ascorbic acid metabolizing enzymes in animals. University of Calcutta.

Botany

1. Anand, N. Studies on some nostocaceae. University of Madras.
2. Kachhawaha, Jawahar Singh. Studies on certain enzymes of fungal origin: A comparative study of cellulose and pectin degrading enzymes secreted by certain pathogenic and non-pathogenic fungi. Ravishankar University.
3. Mandal, Jagannath Prasad. Studies in the morphology, anatomy and taxonomy of Indian lycopodiaceae. University of Burdwan.
4. Patel, Ramanbhai Shankerbhai. Morpho-taxonomic studies in some gramineae. Sardar Patel University.
5. Rajendran, C. Studies on the developmental morphology of some ascomycetes. University of Madras
6. Siddiqui, Kazi Aminul Islam. Fructose 1, 6-diphosphate aldolases of rhizobium species. University of Burdwan.
7. Sonar, Mitthu Lal. Studies on extracellular metabolites of fungi with special reference to the invitro production of amino acids. Ravishankar University.

Zoology

1. Bhatnagar, Achi. Studies on the respiration of an air breathing teleost with observations on certain factors affecting respiration. Vikram University.
2. Bhatvadekar, J. M. Radioautographic and cytochemical studies of cells: Effects of low dose x-irradiation on some metabolites of cells and tissues of guinea pig, rat and mouse. Gujarat University.
3. Chandramohan. Effects of aging on some parameters of the central nervous system function and biochemistry. Bangalore University.
4. Channa, Ashok. Histochemical studies on the digestive system of a few teleost fishes. Meerut University.
5. Datta, Bimal Kumar. Studies on the nematode parasites of fishes of West Bengal. Part I nematodes infecting fishes of the suborder siluroidea. University of Burdwan.
6. Gupta, Sunil Prakash. Studies on the toxicity of few pesticides on *Colisa fasciatus* and *Notopterus* with special reference to histopathology and histochemistry. Meerut University.
7. Kathuria, Pratibha Devidayal. Wound healing and repair in the skin of normal and alloxan diabetic rats: A histophysiological study. M. S. University of Baroda.
8. Mohamad Mohideen, H. Neuro-anatomy, histochemistry and intraocular vascularization of retinae of certain teleosts. Bhopal University.
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**Kaushal Kishore
Deputy Registrar**

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Opinions expressed in the articles and reviews are individual and do not necessarily reflect the policies of the Association.

Editor : ANJNI KUMAR

Changing Credits

The credit system of Sri Venkateswara University College of Engineering, Tirupati, has many novel features. The student can choose his load to suit his capacity and interdisciplinary courses without overloading the teachers. In the flexible credit system, the entire curriculum is not fixed by years or semesters but only the total number of credits required for the degree (195) are fixed. The maximum number of credits a student can register in a semester is 28. The student who is not upto the mark is not allowed to take more courses/credits. If a faster student takes about 4 credits (course) extra per semester, he may be able to complete the course in 4 years against the present 5 years.

The earlier system provided a scheme of fixed curriculum in each semester. Student was allowed to proceed to next higher semester if he passed minimum number of courses in the lower semester at the university examinations or without any restriction. The failed student's load in the next semester increased even though he had proved that he did not have capacity to pass even the normal load of one semester. This student, if once happened to lag behind, continued to lag behind because the system was not flexible enough to enable him to match his load to suit his capacity. The faster student was not permitted to study one extra course, even when he passed freely with higher percentage of marks than what was required for a first class.

Now a student cannot appear at an examination as a supplementary student. The sequence of courses is controlled by pre-requisites. Only the courses in which a student passes are counted.

In the new system, the time-table for the teaching of courses and the examination system are fixed. Students choose the courses that they are going to study during the semester. This system allows the student to take a load matching his capacity, and also offers scope for offering interdisciplinary courses with varying mix. The load on the faculty may be reduced by combining two different classes for a course. Advance standing or exemption for courses studied elsewhere may also be given.

The two by-products of this change are reducing wastage at the examinations without lowering the standards, allowing economical method of diversifying the courses, permitting free promotion, accelerating a faster student.

The 195 credits required for the degree can be taken in five years at the rate of about 19 per semester. If the student can go faster, he has to take about 24 credits only per semester to complete the work required for the degree in 8 semesters and can as well meet the requirements of the All India Council for Technical Education which is four years.

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Work Experience in Rural Development

M. R. Apparow*

While we may agree that the walls between the worlds of learning and work are to be dissolved and thereby strengthen the relationship between education and society we have to exercise the caution that if universities try to be all inclusive they will be 'swamped and overwhelmed'. To quote Edward Shils 'the universities don't exist by accident—there exists in the human soul a yearning to understand and speculate.' Whatever demands that are made on the universities should not erode into the basic and fundamental objectives of the universities. And as a matter of strategy the new and additional functions should be used to strengthen the basic objective of understanding and speculation. Since work experience cannot always be related to the academic study, evaluating the educational merit of work experience presents problems. Keeping these considerations in view we have to work out the model of work experience in university education and think of relating it to integrated rural development.

The one major problem with regard to Indian Education is the lack of link between education and life. Those who come out of the education system after undergoing the treatment for several years find themselves neither useful to the society nor to themselves. The society finds most of them unemployable and the individuals themselves find that they cannot have productive existence. So in effect the education is resulting in not only zero social productivity but also resulting in negative productivity. This malady has to be cured if the society is interested in its development. The analysis of the situation clearly indicates that the educational system is not effectively linking its training with the social production process. In the context of under developed society, economic production process and the participation in such a process essentially involve manual labour. But the present system of education is not oriented to integrating labour with education. This is understandable because historically, the purpose of education in India has been to train the people for non-manual service jobs. But now, this position is inconsistent with the demands and compulsions of the process of development. Though it is realised that manual labour is to be harmonised with non-manual labour, there is no systematic or scientific effort made in this direction. There could be extreme approaches in this direction. One to make the students to engage in some manual work outside the classroom which in fact is the system followed by Soviet Russia during 1920s to early 1960s. In India also we have been tried to do the same in recent years involving the students in the manual work

through such programmes as N.S.S. etc. Communist China is also said to be doing the same. However, it is realised, that merely involving the students in the manual labour does not lead to the realisation of the objectives behind such a programme. The main objective behind such a programme is to inculcate "the dignity of labour". The educationist should not bother so much with the dignity of labour or things like that but should bother more about creating comprehensive and productive individuals. In other words, the dignity has to be built into the manual labour through a process of improving the productivity of the labour. Labour which is not productive can never be dignified. So, the purpose behind introducing manual labour into the activity of the colleges is to improve the productivity of the labour. The other extreme approach could be to teach about the science and technology of labour which was tried during Stalinistic years in Russia. We in India, again are trying to do the same in a very unsystematic manner through our programme of vocational education at the school level, which also cannot stand the test because of the over emphasis on the development of the cognitive abilities ignoring the evaluative and cathectic aspects. For a comprehensive personality development, all the three dimensions are equally important. The realistic approach could be to combine both the approaches mentioned above.

The fundamental principles that should be followed in any society is to build the educative process into the very personality of the individual because in the productive system of the society the participating labour is a crucial factor of production especially in the technological context. The participating labour should have the capacity to quickly master the altering technologies and for this, the labour should be highly creative. The system of education should naturally aim at the creation of this faculty. This is the operational implication of such concepts as 'learning to be'. Toffler also in his prediction of 'future shock' implies this. The main problem is how to achieve this. What are the educational theories and pedagogical methods relevant for the situation. There are no standardised theories and methods yet available. It requires a great deal of experimentation and validation. However, one can always use the existing theories to make a beginning. These are not yet readily available mainly because labour as a factor of production has gained primacy over Capital as a factor of production. Only in recent years and especially in future labour is going to be the most important factor. This is in the very nature of technological

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* Vice-Chancellor, Andhra University.

Towards More Effective Counselling

C. Ramakrishnaiah*

In many of our institutions of higher education, counselling, in some form or other is now being offered as a supplementary service to the student community. If we are to judge on the basis of information in college handbooks, there must be very few colleges that do not boast of such services. However, despite claims to the contrary, it is open to question whether these much vaunted services really amount to anything more than the crude paraphernalia of the routine and unabashed window-dressing that so many of our colleges practise. Curiously, our students and their parents seem to be blissfully unconcerned at being fobbed off, in this respect at least, with such poor value for their fees.

Unlike the affluent western universities, Indian universities are obliged to assign counselling duties to their teachers. The universities are not in a position to provide to their students the services of qualified whole-time counsellors. Our teachers thus find themselves required to take on counselling as one more of the several unrewarding secondary duties that fall to their lot. They do not appear, on the whole, to have been at all eager to take on this additional burden of responsibility. Understandably, one can sense a certain resentment among them at what seems to them to be an imposition of an unwelcome responsibility—a responsibility that makes excessive demands on their scarce resources of time and energy. Perhaps their attitude would not be negative if there were a better appreciation of the purposeful role that a counsellor could play in the overall educational endeavour. Surely, successful counselling can be as rewarding to a teacher as success in any other field of professional activity, such as research, evaluation or consultancy. Be that as it may, it is probably too much to expect all teachers to be ready straightway to be persuaded to view their role as counsellors in this light. Inevitably, the change of attitude has to be a gradual process. The process is bound to be slow while the teaching community continues to subscribe uncompromisingly to the prevailing system of academic values which accords precedence to research and to teaching. If the desired change of attitude is to occur, it would also be necessary for the term *teaching* to be perceived to carry a wider connotation than is at present admitted by most teachers. In academic discussion on the relative importance and scope of the teacher's professional tasks, the term is often interpreted narrowly to refer almost exclusively to the classroom activities of the teacher. We must await, hopefully, the dawn of a more enlightened attitude, when teaching will cease to be viewed in this restricted fashion. It is surely time that the equally crucial

importance of teacher's efforts beyond the classroom receives due recognition.

There is, furthermore, one other factor that impedes effective counselling in our colleges. This relates to the almost invariably uncooperative and lukewarm response of the counsellees. As teachers often justly complain, the counsellees' refusal to respond positively is so frustrating as to drive even the conscientious counsellors into abandoning their unavailing efforts in despair.

It is therefore difficult to avoid the impression that counselling in our colleges has got bogged down in a morass of neglect, indifference and, one must also add with sorrow, even ignorance on the part of both the organisers and administrators of the counselling function as well as of its supposed beneficiaries.

In the form in which it is generally organised in our colleges, the counselling system seeks to assign students in small groups to the care of a teacher who is supposed to guide and supervise his ward's studies, monitor their progress, and also, in a somewhat unspecific sense to 'look after' their welfare. Counsellors tend not to, have a clear idea as to precisely what it is that they are expected to accomplish. Not surprisingly, they are even less certain as to how they are to set about achieving their supposed objectives since they have no clear conception of the objectives. As for the administrators, they are usually content with announcing the appointment of the counsellors and circulating lists of the students assigned to their care. They are in no position to assist the counsellors in arriving at an unambiguous formulation of their tasks. The counsellees for their part, after putting in one or two perfunctory appearances before their counsellors, give up meeting them altogether as soon as the suspicion begins to occur to them that their guides are themselves steeped in confusion as to what they should do. The early phase of ignorance about what might be gained by keeping in touch with their counsellors soon leads to a second phase of resentful awareness of the counsellors' ignorance and insensitivity to their genuine needs and, a sullen anger at the absence of effort on the counsellor's part to identify their wards' needs. The vexatious meetings with the counsellors soon become indissolubly associated with boredom and a sense of futility. Disappointment soon yields ground to disillusionment. While this sums up the counsellees reactions, more needs to be said about the counsellors. It does not take long for them to notice that almost the only occasions when their wards or the college administrators seek information or counsel from them arise when the wards are in trouble of some sort or when they have been guilty of some misdemeanour. These

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could take the form of persistently unsatisfactory performance in a course, prolonged absence without permission from class, or some such lapse of a similar kind. Such being the case, it is scarcely a matter for surprise that the counsellors manage to persuade themselves that their role is primarily disciplinary; and soon this feeling leads them into assuming a forbiddingly censorious manner which before long destroys every vestige of faith in the wards that they would ever be able to find a friend in their counsellor.

These candid comments on what passes for counselling in our colleges will be distasteful to the conscientious counsellors but they would surely not be disposed to deny that if the comments seem to amount to an unfair caricature, they are still substantially faithful to the facts in all respects germane to this discussion. Organising a sound system of counselling does indeed bristle with difficulties. The problems are complex and admit of no simple solutions. Yet it seems clear enough that the one important respect in which counselling as it is organised in our colleges fails utterly lies in the near-total absence of any glimmering of mutual sympathy, insight or understanding between counsellors and counsellees. This failure is attributed by some to the absence of adequate contact between the two on the personal level. It is sometimes suggested that counsellees could be induced to meet their counsellors more regularly if they could be tempted by an occasional biscuit or a cup of tea. The leaders of the campaign for better counselling need to be disabused of their pathetic faith in the efficacy of such simplistic ruses. The suggestion is hardly fair to the students and seems to do them grave injustice by implication. There can perhaps be no surer way of infusing greater confidence among the counsellees about the value of their contact with the counsellors than that of convincing them that their counsellors understand their *real needs* and can be trusted to find solutions to their problems. In devising improved counselling procedures, the first step therefore has to be the identification of student needs. The teachers' experience and observation, when drawn upon intelligently, could lead to useful insights in this respect. Beyond this, there are of course the insights provided by psychologists who specialise in the study of adolescent behaviour and by researchers in this field whose findings are constantly being reported in the professional journals of the teachers. Counsellors will find that effort aimed at determining the actual needs of their wards will prove to have been worth the trouble and time taken over it, since proceeding from a sure grasp of these needs, they would be able to identify the kinds of skill or knowledge and the changes of attitude and disposition required in their wards so as to lead to their acquiring the desired patterns of individual and social behaviour. The needs obviously extend far beyond those that arise in the course of the ward's struggles with the curriculum and its demands. In any event, their

difficulties with their course work are presumably receiving the attention and the corrective action of the teachers in charge of the courses. It seems pointless therefore for the counsellors to allow themselves to be obsessed by their ward's curricular problems.

While planning their counselling strategies, it would probably be wise for the counsellors to begin by taking note of the broad range of student needs. They should be prepared to acknowledge that these needs will inevitably vary from counsellee to counsellee, and will probably remain undetected unless there is systematic probing by the counsellor and a planned effort to bring them to the surface. Apart from the obvious physiological needs, there are others that are felt as a result of social pressures. These might include the desire for affection, a sense of belonging to a group and for the security and reassurance to be derived from an awareness of not being unlike peers who happen to enjoy popularity and prestige. In addition, there could be felt a still other class of needs which have been described as being of an 'ego or integrative' nature. These needs stem from the nature of the student's contact and harmony with reality and is often related to the balance that he may have succeeded or failed in striking between success and failure. Taking due note of all such needs, the counsellor has to evolve an appropriate strategy to impart to his wards courage in facing up to the strains of life, and confidence in being able to grapple with the many problems that arise in their efforts to survive, grow and develop in a highly competitive academic society that is by no means compassionate towards the weak. Yet, it is in the midst of such a society that the students have to mould themselves as individuals, and to choose a code of behaviour that is not merely personally satisfying but is also socially acceptable. It is amidst such a world that they have to acquire a set of values so as to build up a sense of personal integrity. When the counsellors have succeeded in evolving procedures adequate to these diverse needs they will be gratified to note that the wards will now come to them gladly and no longer need to be lured by any sort of inducement.

The counselling strategy has to derive from the general educational principle that has apparently provided the *raison d'être* for counselling services. It often happens that the most carefully constructed curriculum fails to satisfy educators as to its adequacy. No curriculum can hope to be comprehensive and yet remain manageable for the teachers, as to guarantee the allround development of the student's personality. Counselling has emerged in response to the felt need for an alternative route to the ultimate educational objective of helping the student build up what is often termed an integrated personality. The curriculum by itself, however ably formulated, cannot provide for the desired level of personal growth in the students. Many areas of their intellect, character and personality that have remained uninfluenced by their exposure to the curriculum

cry out for the educator's attention. This additional dimension of the learning task can be effectively uncovered for the learners and effort directed to the tackling of it only through supplementary services like counselling. Underlying all such services, there lies the hope that students will be able to attain most fully the objectives of their particular educational programme through individual counselling in combination with those group experiences in which all students share, as a matter of routine, in their classes. Counselling aims, *inter alia*, at helping the students define their goals, clarify their motives, and evaluate their progress in the attainment of their objectives. What counsellors are required to undertake, however tall an order it might sound, is nothing short of the correcting of deficiencies of the curriculum, and of the compensating for its possible omissions and weaknesses. There is often a 'fatal disjunction between academic subjects and life,' and it is the counsellor who has to bridge the gap between the two. It is his task to help his wards formulate standards for the direction of their personal conduct and social behaviour and to aid them in realising their full potentiality.

Counsellors will probably be on safe ground if they adopted such a philosophy for the governance of their counselling programme. The programme itself will of course have to be related to student needs and will be shaped, among others, by other considerations such as whether the counselees are pursuing a general or a specialised or professional educational programme. In what follows, an attempt is made to outline some areas where counsellor's efforts could lead, hopefully, to useful results. The counsellor could make it his special concern to :

1. assist his ward in getting the full benefit of the curriculum, particularly in those areas where the ward is unable to perceive the relation between different courses and consequently fails to integrate his learning experiences. He could help him to perceive the value of any part of the curriculum for which he might have developed an aversion, and give him confidence in breaking through any possible psychological barriers that might be impeding his progress in the problem areas.
2. help his ward become well informed in relation to what might seem peripheral areas but which may have a significant bearing on the ward's educational objectives and the professional role that he envisages for himself;
3. help him to learn to respond fully and satisfyingly to beauty and excellence in life, in art and in literature, and thereby to acquire an unexceptionable taste;
4. encourage him to acquire wide interests ;
5. encourage him to express himself effectively, and thus attempt unobtrusively to improve his skills of communication;
6. create in him a sufficiently strong desire to excel in every task that he attempts, and coax him into giving himself the pleasure

that follow successful performance in a challenging and voluntarily chosen piece of work and generally, to promote in him a lively interest in tackling situation that demand the application of problem solving skills;

7. inculcate in him rigorous habits of self-analysis, and give him courage and honesty in learning to live with himself (possibly through the maintenance of a diary). He could also be encouraged to articulate his beliefs and to defend or justify his convictions and attitudes;
8. help him to master effective and flexible learning strategies and to develop healthy and self-reliant study habits. He could ensure that the ward is diligent and thorough in fully exploiting the library resources accessible to him;
9. keep a careful watch over the emotional state of his ward and whenever necessary help him attain or recover an equilibrium in this respect. While taking care to avoid being too inquisitive (since it is certain to be resented), the counsellor could keep himself informed of the ward's family background and emotional conflicts and personal problems that the ward may face from time to time; and
10. help his ward, if he himself has the competence and if the counselling situation permits it, in making the proper choices in all matters affecting his career.

In addition, the counsellor could also function as a repository of information relating to the ward, and as a contact point for the parent, for the administrators, and for teachers in charge of the courses being taken by his ward. The financial problems of the ward could also be brought within the scope of the counsellor's work. Students are often acutely embarrassed and quite intensely unhappy as a result of such problems; and there appears to be insufficient appreciation of the extent to which their competence as learners could be impaired by the persistence of money problems.

These guidelines for the counsellor will have indicated the complexity of his tasks. Few of these tasks can be tackled successfully by teachers who have only their normal experience as teachers in classrooms to bank upon pedagogical or intellectual skills, however masterly or incisive, cannot by themselves equip the prospective counsellor adequately. They seem to demand some acquaintance with psychology and social behaviour. The earnest counsellor will want to train himself so as to acquire competence in these areas. Administrators could also give serious consideration to the question of organising well-planned courses of training for intending counsellors. Detailed instructions to counsellors could also prove useful, if they incorporated a comprehensive description of the counselling task, and some guidelines for evolving suitable counselling techniques. Even these small steps could pave the way to more effective counselling in our colleges. □

Prime Minister at SNDT Pune Campus

Dr. Madhuri R. Shah, Vice-Chancellor, S.N.D.T. Women's University, while welcoming the Prime Minister, Smt. Indira Gandhi, at the inauguration of the Diamond Jubilee of the University at the Poona Campus said that today universities are in a state of ambivalence. Academic excellence must be pursued under the stress of expansion. Relevance must be interpreted in the context of complex needs of the society. Academic efficiency must be achieved under economic stringency. In this confusing and

made to establish a relationship with students and with the community through non-formal programmes, a relationship where the independence is equal, the dependence is mutual and the obligation is reciprocal.

The Vice-Chancellor referred to the services of Maharshi Karve and Thackerseys to the university. The university with its deep faith in education as an instrument of social change is now entering the third phase in its development and will endeavour to meet the

tied down with the constraints and rigidity imposed by the shackles of formal hierarchy of education and single entry system.

The Education Minister of Maharashtra, Smt. Prabha Rani, referred to the special role of SNDT. The university has tried to deserve high expectations of its well wishers. It has pioneered many innovations like all-India affiliation, external studentship and specialised orientation for career as well as home studies for women. It is poised to introduce science and technology courses and take up exclusive research on the problems facing women in this country. In all these endeavours it has had the able stewardship of Dr. Premilaben Thackersey.

Smt. Indira Gandhi lauded the efforts of the university in the cause of women education. She said that it is difficult for the younger generation to visualise the discrimination against women which incensed Dr. Karve, Rajaram Mohan Roy and Vidyasagar. The condition of our women has improved because of the zeal and dedication of social reformers, the fighting spirit of pioneering women, and above all the national self-examination induced by Mahatma Gandhi.

Referring to the role of education in the Indian History she said that our educational system has evolved in a way which tends to perpetuate inequality between men and women, as unfortunately also between man and man. A recent survey of textbooks has shown that they promote the supporting role for women and that action, leadership, dynamism, artistic creativity and intellectual genius are male prerogatives. Historical reasons compelled us to have separate schools and colleges for women. It is also understandable that if a large percentage of women take to house-keeping as a career, they should study domestic science. Education is Education. Its content and purpose do not change with gender. Neither women nor

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Prime Minister, Smt. Indira Gandhi, addressing at the Diamond Jubilee Celebrations of SNDT Women's University.

conflicting situation it is time to understand Gadhi's basic direction towards the wholeness of life which is built on deep and enduring values. We cannot afford to stagnate in the backwash of outworn traditions. While conserving the best from the past and learning its lessons, we have to be alive to enquiry and change to explore new areas and ideals, for a preferred future for women. At the SNDT an all-out effort is

changing aspirations of young people and try to make it possible for women to contribute effectively to national growth by providing opportunities which are in consonance with their capabilities and which have relevance to the needs of the community. During diamond jubilee year the university has set up a polytechnic which offers job-oriented programmes specifically suited to women, programme which are not

BITS field study programmes

The Birla Institute of Technology and Science, Pilani, has started sending a large number of students and faculty members to organisations outside its campus throughout the country to make them 'learn by experience.' In this innovative approach the BITS has drifted from the traditional practice of classroom teaching. The new experiment will make the education more relevant to society. The students will be sent out to the field areas where they will learn the hard way under the supervision of the BITS resident faculty thus providing them an opportunity to apply their classroom knowledge to live situation. This year more than three hundred students and sixty faculty members from all disciplines will be sent out from two to six months on-the-spot experience at industries, banks, business houses, research institutes, consulting and design offices across the country under the practice school programme. The first practice school of BITS was started early in 1973 at the Hindustan Aluminium Corporation in Renikoot with twelve students and four teachers. BITS has now over 42 practice stations attached to several host organisations throughout the country. Each practice station, according to Dr. Vijay Manke, Dean of the School, is a sort of mini BITS complete with classroom, office and some of them with hostels for students and the resident BITS teachers. Almost every student whether he studies engineering, languages, science, or economics spends upto eight months in any of these practice stations—two months in the third year and six months in the final year. The students along with their teachers and staff of the host organisations work as a team in studying and solving real life problems that cannot be taught in classrooms.

A recent seminar held in Pilani to review this innovative approach was attended by leading

educators and representatives of host organisations who welcomed the practice schools as the first successful Indian experiment to build a bridge between university, industries and society. The practice school benefits everyone—students, teachers and the hosts. Apart from exposing students to real problems of society, the practice station enables them to meet their future employers. It helps the host organisations update their academic knowledge by their inter-action with BITS faculty. Among the BITS faculty the practice school creates greater awareness to social problems which in turn makes them better teachers when they return to the

headquarters. The success of practice schools in the last three years has been impressive and now several organisations in the country are playing host to BITS.

The normal feature of the practice school is that it is open to all students irrespective of their disciplines. Science students go to practice stations attached to banks, industries and research institutes while economics students are sent to banks, business houses and the National Council for Applied Economic Research New Delhi. Last year a batch of language students from BITS had their practice session at the Hindustan Times office and at the Samachar news agency in Delhi.

INDIAN SCHOOL OF MINES DHANBAD-826004.

No. 615003/76

Dated December 20, 1976

Entrance Examination (1977) for admission to three-year condensed B.Tech degree programmes in (i) Mining Engineering and (ii) Mining Machinery.

Indian School of Mines, a 'deemed' University, invites applications for its all-India Entrance Examination for Admission to its three year condensed programmes leading to the award of the degrees of B. Tech. (Mining Engineering) and B. Tech. (Mining Machinery). The Examination will be held on May 20 and 21, 1977. The session is likely to commence in the last week of June 1977.

Likely examination centres

Bangalore, Bombay, Calcutta, Delhi, Dhanbad, Hyderabad, Nagpur and Udaipur.

Prescribed qualifications :—A pass in S.S.L.C./Matriculation or Higher Secondary (or equivalent examination) and a Diploma in Mining or Mine Surveying for the B.Tech. (Mining Engg.) Programme and Diploma in Electrical/Mechanical Engg. for the B. Tech. (Mining Machinery) programme. Candidates should have atleast three years industrial experience. Preference would be given to sponsored candidates.

Prescribed application forms and Memorandum of Information will be available from end of January 1977 upto March 15, 1977 on payment of Rs. 5.00 by Money Order payable to Registrar, Indian School of Mines, Dhanbad-826004.

Applications in the prescribed form complete in all respect should reach the Registrar, Indian School of Mines, Dhanbad-826004 by **March 22, 1977.**

**M.S. RAMAMURTHY
REGISTRAR**

Nagendra Singh addresses GND Convocation

Mr. Justice Nagendra Singh, President, International Court of Justice, was the chief guest at the convocation of Guru Nanak Dev University. The degree of Doctor of Laws (Honoris Causa) was conferred in recognition of his attainments and the services rendered by him to the nation and to the international community in the fields of education and jurisprudence.

In his address he referred to the teachings and philosophy of Guru Nanak Dev. He also emphasised the role of science in the modern world. He said that science is the key to greatness and progress of a nation. Applied sciences and technology are therefore the subjects of study both from the individual as well as the national view points. The value of the knowledge and expertise of these subjects is in the greatest demand. The developing countries like India need, above all, chemists, physicists, engineers, medical experts, minorologists in large numbers. Those who pursue these subjects and acquire distinction in them not only help themselves but also the country they serve.

In view of the unemployment of the educated it is necessary to select the right subject provided always one has the aptitude for it. The need of the hour is to foster a dynamic society. Change is the essence of life. Nothing is static in this world. Universities are the instruments of social change. All centres of learning must have freshness in thought and approach. The student community has an important role to play in the social and economic changes which the country needs to fit into the modern world which too is ever changing.

The university on this occasion also conferred the degree of Doctor of Letters (Honoris Causa) on S. Inderjit Singh, Chairman of the Punjab and Sind Bank Ltd.

PAU moves to decentralise extension services

Dr. Amrik Singh Cheema, Vice-Chancellor of Punjab Agricultural University, has suggested to the agriculturists of Punjab to take to other crops in addition to wheat which had so far been the mainstay of agriculture in the State. It was no longer a viable economic proposition since many other States like Assam, Bihar and Bengal, have taken to wheat farming. In view of this development he called for diversification of agriculture and proposed to decentralise the extension services of the university so that the research was effectively applied to the farmers field in other areas as well. The university would soon set up research and extension centres at each district headquarters and will constitute farm advisory committees to mobilise the work on research activities and extension services. With the assistance of the World Bank, a project on the cotton research would be

established by the university which will help in analysing the problems of cotton production in all aspects.

Potato and horticulture also had great potentials which would be exploited by the university. He proposes to hold more kisan melas at all districts and distribute seeds on this occasion to the farmers. The University Grants Commission under a new programme has selected four colleges in the State which would be involved in taking soil samples. Such colleges will have soil laboratories and after the soil has been tested it will be interpreted by an expert of the Punjab Agricultural University. The Rajendra Government College, Bhatinda, is one of these four colleges. The university has already started training the teachers incharge of these colleges and soil samples have been taken from two villages. The university would further help these centres in setting up modern soil testing laboratories.

INDIAN SCHOOL OF MINES DHANBAD-826004

No. 615056/77

Dated 31-1-1977

Competitive Examination Direct Admission

The Indian School of Mines, a deemed university, invites applications for direct admission to the 2nd year of its 4-year programme leading to the award of M.Sc. degree in Applied Geophysics. Only a limited number of seats are available.

A Competitive Examination will be held on Friday, the 13th and Saturday the 14th May, 1977. The new session is likely to commence in the last week of June, 1977.

The likely centres for the Competitive Examination are :
Ahmedabad, Asansol, Bangalore, Bhopal, Bombay, Baroda, Calcutta, Chandigarh, Coimbatore, Cuttack, Delhi, Dhanbad, Digboi, Gauhati, Gudur, Hyderabad, Jaipur, Jodhpur, Keonjhar, Lucknow, Madras, Muzaffarpur, Nagpur, Patna, Ranchi, Sahdol, Simla, Srinagar, Tiruvandrum, Waltair.

Prescribed qualification : Candidates must have passed the B.Sc. degree examination of a recognised university with Physics, Mathematics and Geology or Chemistry and Higher Secondary or equivalent examination with Physics, Chemistry, Mathematics and English. Candidates appearing in the B.Sc. examination are also eligible to apply but must produce necessary evidence of having passed the examination by June 27, 1977.

Prescribed application forms and Memorandum of Information will be available upto March 10, 1977 on payment of Rs. 5/- by Money Order payable to the Registrar, Indian School of Mines, Dhanbad-826004.

Applications in the prescribed form complete in all respects should reach the undersigned latest by March 15, 1977.

M.S. RAMAMURTHY
REGISTRAR

Prof. Hasan inaugurates 46th session of National Academy of Sciences

Prof. Nurul Hasan, Union Minister for Education and Social Welfare, while inaugurating the 46th session of the National Academy of Sciences at the University of Delhi, said that the responsibility for maintaining the highest standards of scientific training and research in the country, for providing guidance to the nation and the government on the direction of science policy, to ensure co-ordination between the universities and the governmental scientific agencies in matters of scientific research and to suggest ways to utilise the surplus scientific manpower of the country, rests with the three main scientific academies in the country.

The scientific community of the country has to share the responsibility for accelerating the process of development and it is for the community itself to organise itself and bring greater cohesiveness in its functioning through the academies. He said that though it was difficult to draw a rigid line between fundamental research and applied research but the emphasis at the national laboratories, he suggested, should be on applied research in the universities. He appealed to the scientists not to be carried away by the problem of relevance. He felt that it would be dangerous to put all their energies and resources into applied research to solve the immediate problems. In this context he referred to the decision taken by the Ministry of Education in the 10+2+3 scheme to introduce compulsory science at school level and said that the syllabi drawn up in the 1940s need to be not simply updated but thoroughly overhauled. He suggested that the syllabi for sciences at the +3 stage should be not less advanced than an undergraduate honours course in any university in any country. Referring to the problems of surplus scientific manpower he said that they could ill-afford the luxury of

unemployed scientists and hoped that the revised grades for scientists approved by the University Grants Commission would considerably alter the situation. He wanted the National Academy of Sciences to suggest ways to utilise the trained scientific manpower.

Prof. R.C. Mehrotra, Vice-

Chancellor of Delhi University, while welcoming the guests referred to the fall in enrolment for the sciences at universities and said that a vicious circle had been created resulting in bleak job opportunities. He suggested immediate steps to stem the under-utilisation of scientific manpower in the country.

INDIAN SCHOOL OF MINES

DHANBAD-826004

No. 615002/76

Dated December 20, 1976.

Entrance Examination-1977

The Indian School of Mines a 'deemed' University, invites applications for the Entrance Examination for admission to its 4-year programme of studies leading to the award of (a) B.Tech. degrees in Mining Engineering and Petroleum Engineering, and (b) M.Sc. degrees in Applied Geology and Applied Geophysics. A B.Sc. (Hons.) degree in Applied Geology and a B.Sc. degree in Applied Geophysics is awarded after successful completion of two years of the 4-year programme.

The Entrance Examination will be held on Friday, the 13th and Saturday, the 14th of May, 1977. The new session is likely to commence in the last week of June 1977.

The likely centres for the Entrance Examination are :—

Ahmedabad, Assansol, Bangalore, Bhopal, Bombay, Baroda, Calcutta, Chandigarh, Coimbatore, Cuttack, Delhi, Dhanbad, Digboi, Gauhati, Gudur, Hyderabad, Jaipur, Jodhpur, Keonjhar, Lucknow, Madras, Muzaffarpur, Nagpur, Patna, Ranchi, Sahdol, Simla, Srinagar, Tivandrum, Waltair.

Prescribed Qualifications :—A pass in the plus 2 stage after 10 years schools stage (Intermediate Science, 2 years Pre-degree/Pre-University examination) with Chemistry, Mathematics, Physics and English OR 1st year examination of the 3 year degree programme or equivalent examination (with Physics, Chemistry, Mathematics and English). Those who have appeared in the above examinations are also eligible to apply but should submit necessary evidence of having passed the qualifying examination by June 25, 1977.

Age limit :—21 years for B. Tech. in Petroleum Engineering and 22 years for other programmes as on October 1, 1977. The age limit is relaxable by three years for Scheduled Castes/Schedule Tribes candidates.

Prescribed application forms and Memorandum of Information may be available from January 30, 1977 upto March 10, 1977 on payment of Rs. 5/- by Money Order payable to the Registrar, Indian School of Mines, Dhanbad-826004.

Applications in the prescribed form complete in all respects should reach the undersigned latest by **March 15, 1977.**

M.S. RAMAMURTHY
REGISTRAR

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any other minority which traditionally has been denied its share of opportunity should be too long dependent on special concessions. The aim should be to work on level terms with others. The first step to equality is to feel equal and to overcome the attitude of looking to the mercy of others. She said that the modern Indian woman has a special responsibility to be a catalyst of change, synthesising the best of the old with the best of the new.

Study centres for student welfare

The University Grants Commission has provided outside the Fifth Plan allocations, funds for universities and colleges to improve the living conditions of hostels through dining halls and sanitation. A survey of the living conditions of the students in universities and colleges was made recently. The eighteen member working group on student welfare programmes of the Commission has recommended to assist establishment, or improvement of canteens even in colleges with less than one thousand students, in the case of three-year degree course and 650 where two-year degree courses are offered. The Group has further accepted that the assistance to universities and colleges for students aid fund be raised to twice the amount raised by the institution instead of an equal amount as at present. Such aid would however have a ceiling of Rs. 50,000 for universities with direct enrolment of 5,000 and more and Rs. 25,000 for those with fewer students. For colleges the ceiling varies from Rs. 1,500 in the case of institutions with 250 students or less to Rs. 10,000 for those with an enrolment of more than 2,500. The working group has further suggested that assistance available should be indicated to students at the start of an academic session and that it should be mostly by way of reimbursement of expenses.

The Commission has also decided to continue in the Fifth

Plan period a scheme for study centres with increased assistance to promote students welfare. In regard to funds for new centres the ceiling has been raised from Rs. 20,000 to Rs. 30,000. An additional provision of Rs. 15,000 has been made for stacks and furniture for each centre. On the recurring side the new study centres will get Rs. 15,000 for staff expenses and Rs. 4,500 for contingencies which would be thrice the amount as at present. The study centres, 106 in all in the country, will be preferably located outside the university campus in centrally situated places.

Andhra Ordinances to help JNTU

The Jawaharlal Nehru Technological University, Hyderabad, after the recent promulgation of an Ordinance can accept moneys from the State and Central Governments and the University Grants Commission. The university could also borrow money from a bank or a corporation but it will have to obtain the prior approval of the government, if it intends to borrow money from the bank or the corporation or both exceeding Rs. 50,000 at a time or in the aggregate. The ordinance further stipulates that without the prior approval of the Government the university shall not divert earmarked funds for other purposes or revise the scales of pay of its staff or employees or implement any scheme which involves any matching contribution from the government or which imposes a recurring liability on the government after the assistance from the sponsoring authorities ceases. The ordinance further provides that the Finance Committee may authorise the creation and filling up of posts of teachers for a period not exceeding one year, but that any such post shall not be continued or created afresh for any period beyond the said period of one year without the prior written approval of the government.

UN Varsity Centre at CFTRI

The Cental Food Technological Research Institute, Mysore, has been selected by the newly formed United Nations University established in Tokyo, Japan to train scholars from developing countries in the advanced techniques of post-harvest conservation and processing of foodgrains.

The CFTRI is the only Institution selected by the UN University to provide advanced training and to identify specific research priorities under world Hunger Programme.

The CFTRI will function as an Associated Institution of the University and will provide both multi-disciplinary and applied training in practical areas of post-harvest food conservation at appropriate levels through improved handling, storage and processing techniques.

The Director of Institute will be over all incharge of the supervision of the programme and to its judicious implementation. The U. N. University will provide adequate support to the Institute in implementing these programmes.

The Centre has already been started from November, 1976 at CFTRI, Mysore and has recommended ten scholars from different developing countries for training in post-harvest food conservation and processing.

Kanchenjunga Expedition

The Indian Army is launching an expedition to Kanchenjunga, the highest Indian mountain. It is proposed to compile the information in the form of a book after the completion of the expedition. The Army Mountaineering Association, Army Headquarters, General Staff Branch (MT-8), DHQ PO, New Delhi, would be happy to register the demands for this book from readers of the University News.

New courses at Venkateswara

Sri Venkateswara University has instituted three new courses of studies in the current year. They are MA in Popular Studies, MA in Econometrics and Master of Laws. M Phil has been introduced in all the twentyfour departments of the university college. This year under the faculty improvement programme, teachers from affiliated colleges have come to the university college for the completion of MPhil course in the four major science subjects, Physics Botany Chemistry and Zoology. Refresher courses for teachers were also organised by the university in Physics, Chemistry and History this year.

Computer for Annamalai

Annamalai University proposes to acquire an electronic digital computer, TDC-316 system with 28 Kmemory and peripherals at a cost of Rupees thirty lakhs. The University Grants Commission has agreed to provide the necessary financial assistance for this purpose. The installation of the computer would accelerate the research activities in the country. The computer service would be made available to the various university research departments and also to the neighbouring industrial and educational institutions in the district.

Research awards for teachers

A sum of Rs. twenty crores has been earmarked for accelerating scientific research universities in the country. It is expected that special awards would be available to college teachers for research work under the short-term and in-depth programmes of the University Grants Commission. Prof. Satish Chandra, Chairman of the Commission, asked the universities to select one or two leading colleges in each

district to which grants for research work and for increased hostel facilities for rural students would be made available. The selection of these colleges is to be made on the criterion of the students strength, teacher student ratio and the college capacity to cater to rural needs. Each of such selected colleges would be given a special grant of Rs. three lakhs over the period of various improvement programmes.

NEHU steps to develop Garo language

The Centre of Continuing Education of the North-Eastern Hill University, Shillong, organised a symposium on Garo language recently. Garo language has already been prescribed at the school and college level Dr.C.D. S.Devanesen, Vice-Chancellor of the university in his inaugural address said that the university has taken many steps to develop Garo language as a means of social, economic and cultural uplift of the people in Meghalaya. Prof. K.Momin, Principal of Tura College was the Director of the symposium.

Prof. Momin appreciated the role of the Vice-Chancellor in developing various tribal language of the region by the university. He also referred to the efforts of the Centre for continuing education for the uplift of the community at different levels. He said that the language was the most important vehicle of communication and as such its development should have the first priority. It would be helpful not only in respect of building up all literature but also in promoting as agency of social service and community development. The Garo literature has steadily grown to its present status over the years. The role of Baptist Missionaries in developing Garo literature has been creditable. Dr. Stephen Smith referred to the establishment of Lucy Smith Memorial Library which had played a significant role in the development of this infant literature. Rhymes, poems, short

stories and plays are now finding a place in the Garo literature but it needed further encouragement for its proper development and growth.

Various participants emphasised the need for improving the spellings to remove the difficulties in the establishment of standardised spellings. Potentiality of this language was great and significant contributions were made during recent days. A Board of Publications has already been started by the Government to enrich the literature and enable the writers to play a bigger role by publishing their works. The symposium provided a rare opportunity to writers and artists for a healthy exchange of views. It was also stressed during the discussions that special encouragement should be afforded to young writers for the collection of legends, stories and near obsolete words from the interior places.

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4. Qualification and Age may be relaxed by the Executive Council on the recommendation of Selection Committee in the cases of Scheduled Caste/Scheduled Tribes candidates and also to those who are otherwise found suitable.

5. Higher starting salary may be considered in the cases of an exceptionally qualified and experienced candidate.

6. Applications on the prescribed form, to be obtained free of cost from the University Office by sending self-addressed envelope of 24 x 12 cms. size, bearing postal stamps worth 35 paise only should reach the undersigned (by name) by 31.3.77.

7. Application should be accompanied with a crossed Indian Postal order of Rs. 10/- for the post of Reader, Rs. 5/- for the post of Lecturer and Rs. 3/- for the post of Technical Assistants in favour of the Registrar, Bhopal University Bhopal, as application fees. The appointment will be made in accordance with the University rules and on probation for a period of Two years in the first instance.

8. Persons already in service must apply through proper channel. They may send an advance copy of their application within the due date and should bring a 'No Objection Certificate' from their employer when called for interview.

9. Candidates selected for interview will be required to travel at their own expenses.

Dr. R. N. Singh
Registrar

Approach paper for new training of teachers

The National Council for Teachers Education has recommended that the courses in teachers training institutions should be overhauled in such a manner so that the teachers are able to impart non-formal education and guide students in the national service scheme programmes. In the draft approach paper to teacher education problems the council has suggested that training of pre-primary and primary school teachers could be instituted as a vocational course at the plus two level and an extra year be provided thereafter to the trainees for acquiring practical skills. Four alternative models for training secondary school teachers have been suggested. Prospective secondary school teachers could be put through the usual one-year BEd course after graduation or a four or five-year integrated course after higher secondary leading to BEd and MEd degrees or a two-year professional course after graduation leading to MEd or a correspondence-cum-contact programme.

If the last alternative is accepted, theory can be imparted through correspondence and practical skills through a contact programme.

The NCTE has further suggested a one-semester programme for college teachers to help them use techniques more effective than traditional lectures and practicals. The training courses, the paper suggested, should be restructured in the light of the new curriculum under the 10+2 pattern of education. It is recommended that the semester system and grading system be used to assess such programmes. Refresher courses should also be organised by the teachers training colleges.

South campus of NIS activated

The south campus of the National Institute of Sports, Bangalore, has launched a project to train over one thousand students of the various education

institutions of Bangalore. Shri Gurubax Singh, Deputy Director of the Institute said that the trainee coaches of the institute will be incharge of the scheme. Besides regular training, coaching will also be provided in maintenance of playgrounds and equipment. He said that the construction of Rs. two crores Sports complex near Bangalore University campus on the Mysore Road will commence shortly. The Karnataka Government has already sanctioned a sum of Rs. 25 lakhs for the purpose. During 1976 the NIS has conducted thirteen training camps in hockey, badminton, volleyball, athletics and football. Various athletic meets were also supervised by the staff of the institute.

UGC aid for playgrounds

The University Grants Commission would provide assistance to the universities and colleges for gymnasium and improvement of play fields on a sharing basis. This will be on 75 : 25 basis with the Commission bearing larger expenses. The Commission has accepted the recommendation to this effect made by the working group in order to secure the participation of the maximum number of students in games and sports. While providing the assistance the Commission would like to ensure that adequate funds are also provided by the State Governments for maintenance of buildings.

Form IV

(See Rule 8)

Place of publication	New Delhi
Periodicity of its Publication	Fortnightly (w.e.f. 1st January, 1977)
Printer's Name	Anjni Kumar
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Address	
Names and Address of individuals who own the newspapers and partners or shareholders holding more than one percent of the total capital.	The Journal is published on behalf of the Association of Indian Universities, Rouse Avenue, New Delhi-110002

I, Anjni Kumar, hereby declare that the particulars given above are true to the best of my knowledge and belief.

sd/-
Publisher

Orientation course in higher education

B. N. Chakravarty University, Kurukshetra, organised a ten day orientation course in higher education in collaboration with the National Staff College for Educational Planners and Administrators in Delhi. Eighteen college principals from Haryana participated. Question banks, internal assessment and the grading system were the topics of discussion.

Dr. S. K. Dutta, Vice-Chancellor while delivering the valedictory address asked the principals of colleges to apply their minds to the various arrangements to be made under the new pattern of education. He felt that it might be better that the academic plus two system remained with colleges and vocational training was given by further organising the existing polytechnics or by starting some vocational schools. It should also take into account the manpower requirements and the vocational

training needs of the State concerned.

Panel to examine capitation fee

The Karnataka Government has constituted a committee to examine the collection of capitation fee both by aided and non-aided engineering colleges in the State. The reference to this committee is to examine the extent of capitation fee being collected and secondly whether the practice of levy of such a fee should be banned or regulated and if so what measures are necessary to implement the proposals. Shri R. L. Sreshta, Director of Technical Education and Chairman of the Committee, has invited views of the public on this issue.

Rural scientific orientation

Prof. B. Ramachandra Rao, Vice-Chairman, University Grants

Commission, while inaugurating the Mysore University Diamond Jubilee Science Exhibition stressed the need for re-orienting science education keeping in view the problems of rural development. He said that rural development should form part of the university curricula but it should not be diversified from academic studies. He called upon scientists and technologists and engineers to devote themselves to the application of science to rural welfare. There was urgent need to establish centres for improvement and development of tools and technology in the rural areas whether it was in connection with farming, sanitation, mushroom cultivation, bullock-carts or gobar gas. He supported the university's Operation Bharani—its rural integration programme—and said that the University Grants Commission would examine the implications of this important scheme.

Work Experience in Rural Development

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development. Labour here should be understood as a comprehensive concept which includes not only the physical work involved but more importantly it includes the technology that should go with work. The concept of labour has reached such sophistication that it combines in it an indistinguishable manner all the factors of production that are conventionally known. The main task of the educational process is to substitute all the factors of production by the labour.

In order to achieve this, the entire educational structures curriculum and methods have to undergo a radical change. The main feature of the new system could be the integration of Curriculum, production process and labour. This requires, from the point of view of the curriculum the fundamental principles of science, applications of science, the principles behind the application of science, the economic significance of such applications and the demonstration of the applications. All these aspects are to be integrated. Then the learner will be able to comprehend the theory and practice alongwith the production process. Such training will result in integrated or comprehensive individual. More importantly, the student will not view the physical labour involved as something different from the other material

and theoretical aspects involved. Hence he will not view labour as something inferior. Such training will naturally lead to the development of creative faculties among the students. The creative faculty is essential because he will be in future learning on his own.

The methods of teaching must also be different in this new system. The basic requirement here is to utilize the surrounding environment as the teaching aids. This obviously requires imagination and perception on the part of the teacher to know how to select or identify the objects of the surrounding environment to be used as the aids. Additionally it requires an effective collaboration with the various organizations and units of production or in other words the whole community surrounding the colleges. Of course, it requires a great deal of experimentation in developing the pedagogical methods. We have suggested only a broad framework. This also involves a great deal of work in the preparation of textbooks and other teaching materials. Relevance is the criterion for the preparation of the curriculum and teaching aids. The work experience in university education should be conceived as indicated above and then it could be meaningfully integrated into any development process including the rural development.

Conferences, Seminars and Workshops in India

March-April, 1977

Date	Title	Venue	Sponsoring Body
1977			
Feb/March 28-5	Building Research & its application in developing countries	New Delhi	Central Building Research Institute
March			
2-3	Silting of reservoirs with special reference to estimating the life of reservoirs.... Seminar	New Delhi	Central Board of Irrigation & Power
2-16	Workshop for Asian Writers	New Delhi	India International Centre
3-5	COSTED Seminar on Technology Information Services for Developing countries	Madras	I.I.T.
4-6	International Symposium on Venoms and Toxins	Bombay	Haffkine Institute
7-12	International workshop on Sorghum	Hyderabad	International Crops Research Institute for the Semi-arid tropics
7-19	Materials management	Hyderabad	Administrative Staff College of India
8-9	Linking wages with productivity	Bombay	National Productivity Council
8-19	Advanced Computer Systems	Hyderabad	Administrative Staff College of India
10	Workshop on quality control	Madras	Association of Indian Engineering Industry
12-13	5th Homeopathic Scientific Seminar	Nagpur	Homeopathic Medical Association of India
14-24	Operations research and behavioural sciences	New Delhi	Indian Institute of Public Administration
14-26	Rock mechanics and opencast mining	SCCL/ Singareni	Indian School of Mines, Dhanbad
2nd week	Workshop on Microteaching	New Delhi	Dept. of Teacher Education, NCERT
21-25	3rd National Seminar on the management of agriculture	Gauhati	All India Management Association
21-26	Application of colorimetric methods for rapid chemical Analysis and quality control in cement plants	New Delhi	Cement Research Institute
21-26	Management of personnel	Hyderabad	Administrative Staff College of India
21 Mar- 9 Apr	Geo-exploration	Dhanbad	Indian School of Mines
21-22	Preventive maintenance in road transport	Bombay	National Productivity Council
23-27	Oriental entomology symposium	Madras	Entomology Research Unit, Loyola College
24-25	Coastal engineering	Panaji (Goa)	National Inst. of Oceanography
24-26	Traditional systems of Medicine in India	Lucknow	CDRI
26 Mar- 1 Apr.	Comprehensive evaluation of textbooks of Kerala	Trivandrum	NCERT, Dept of Textbooks
28 Mar- 1 Apr	Workshop on Management of Engineering Research & Development	Durgapur	Central Mechanical Engineering Research Institute
28 Mar- 6 Apr	Demand forecasting	Hyderabad	Administrative Staff College of India
28 Mar- 9 Apr	Marketing management	-do-	-do-
March	Comprehensive Evaluation of Textbooks of Maharashtra Workshop	Poona	NCERT, Dept of Textbooks

Date	Title	Venue	Sponsoring Body
March	Golden Jubilee of Delhi State Centre of Institution of Engineers (India)	New Delhi	Institution of Engineers (I)
"	Radar Signals : analysis and processing techniques	Madras	Centre for Systems & Devices I.I.T. Madras
"	Semi Conductor device technology	-do-	-do-
April			
4-9	Material handling systems	Dhanbad	Indian School of Mines
4-16	Organisation development in mining	-do-	-do-
5-6	Modernisation and renovation in the textile industry	Ahmedabad	Ahmedabad Textile Industry Research Association
9-13	Technology for agricultural development	Chandigarh	Institution of Engineers (I)
11-12	Tribal development in India with special reference to Bastar District of Madhya Pradesh	New Delhi	National Council of Applied Economic Research
11-16	Geology for non-geology executives	Dhanbad	Indian School of Mines
12-14	Corporate performance appraisal: 6th seminar	Madras	All India Management Association
12-21	Management of R & D	Hyderabad	Administrative Staff College
14 Apr-	English Language teaching for college teachers:	Calicut Univ	UGC & BC
25 May	Summer Institute		
18-30	Electronics for the mining industry	Dhanbad	Indian School of Mines
18 Apr-	State planning, with a background of macro-planning	Hyderabad	Administrative Staff College of India
22 May			
24 Apr-	English Language teaching for college teachers,	Baroda Univ	UGC & BC
4 June	Summer Institute		
25 Apr-	-do-	Madras Univ	-do-
3 June			
28-29	Effective corporate board structure	Delhi	All India Management Assoc.
April	Aircraft control & automatic piloting	Madras	IIT
"	Disparate rates of growth in Agriculture: causes and remedies	New Delhi	Indian Society of Agricultural Economics
"	National Conference on hypertension	Bombay	Cardiological Society of India

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Aircraft control and automatic piloting

April 77

Agriculture

Disparate rates of growth in Agriculture: causes and remedies
International workshop on Sorghum
Technology for agricultural development
3rd National seminar on the Management of Agriculture

April 77
7-12 Mar
9-13 April
21-25 Mar

Computers

Advanced computer systems

8-19 Mar

Education

Comprehensive evaluation of textbooks of Kerala
Maharashtra Workshop
Workshop on microteaching

26 Mar-1 Apr
March

Engineering & Building	
Building research & its application in developing countries	28 Feb-5 Mar
Electronics for the mining industry	18-30 Apr
Golden jubilee of Delhi State Centre of Inst. of Engineers (I)	March
Radar signals : analysis and processing techniques	March
Semi conductor device technology	March
Silting of reservoirs with special reference to estimating the life of reservoirs...seminar	2-3 Mar
Workshop on management of Engineering Res. & Development	28 Mar-1 Apr
English language & literature	
English language teaching for college teachers : Summer Instt. Baroda	24 Apr-2 June
" " " " " Calicut	14 Apr-25 May
" " " " " Madras	25 Apr-3 June
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Geology for non-geology executives	11-16 Apr
Literature	
Workshop for Asian writers.	2-16 Mar
Management	
Corporate performance appraisal: 6th seminar	12-14 Apr
Demand forecasting	28 Mar-6 Apr
Effective corporate board structure	28-29 Apr
Linking wages with productivity	8-9 Mar
Management of personnel	21-26 Mar
Management of R & D	12-21 Apr
Marketing management	28 Mar-9 Apr
Operations research & behavioural sciences	14-24 Mar
State planning, with a background of macro-planning	18 Apr-22 May
Workshop on quality control	10 Mar
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Coastal engineering	24-25 Mar
Materials handling	
Material handling systems	4-9 April
Materials management	7-19 Mar
Medicine & Health	
5th Homoeopathic scientific seminar	12-13 Mar
International symposium on venoms & toxins	4-6 Mar
National conference on hypertension	April
Traditional systems of medicine in India	24-26 Mar
Mining	
Organisation development in mining	4-16 Apr
Rock mechanics and opencast mining	14-26 Mar
Science	
Oriental entomology: symposium	23-27 Mar
Technology	
Application of colorimetric methods for rapid chemical analysis and quality control in cement plants	21-26 Mar
COSTED seminar on Technology Information services for developing countries	3-5 Mar
Modernisation & renovation in the textile industry	5-6 Apr
Transport	
Preventive maintenance in road transport	21-22 Mar
Tribal Development	
Tribal development in India with special reference to Bastar Dist. of Madhya Pradesh	11-12 Apr

(Courtesy : British Council)

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Basu, Uma. Some problems of continuum mechanics with some general constitutive equations. University of Calcutta.
2. Gupta, P. K. Some second order torsion problems for multiply connected and composite region in mathematical theory of elasticity. I. I. T., Bombay.
3. Mukhopadhyay, Sukla. On some dynamical problems in plasma and fluid mechanics. University of Calcutta.
4. Prasad Rao, B. R. Contributions to bio-fluid mechanics. I. I. T., Kanpur.
5. Sachidananda, S.V. Incompressible slip flows with permeable boundaries. I. I. T. Kanpur,
6. Saxena, Rajendra Kishore. A study of the spaces of analytic functions over non-Archimedean fields. University of Delhi.
7. Sharma, Ajit Kumar. Flow of liquid crystals of cholesteric type. Indore University.
8. Sharma, Ram Krishan. Study of periodic orbits for restricted problem taking the bigger primary an oblate spheroid. University of Delhi.
9. Subhash Kumar. Generalized forms of Reynolds equation and their mathematical analysis. I. I. T., Kanpur.

Operational Research

1. Jain, Janendra Prasad. Optimal control problems in queuing theory. University of Delhi.

Physics

1. Ashwani Kumar, P. K. Study of the excess electrical conductivity in thin superconducting lead films due to thermodynamic fluctuations of the order-parameter. University of Delhi.
2. Dham, Ashok Kumar. A study of force constants of an intermolecular potential for inert gas mixtures. Punjabi University.
3. Ghodgaonkar, Ashok Moreshwar. Studies of field emission and electrical conduction in thin films. University of Poona.
4. Goswami, B. N. Nonlinear waves in dispersive media and current driven instabilities in magneto plasmas. Gujarat University.
5. Gupta, Prabhat Chandra. Analysis of vibrations and their effects in matched filtering. I. I. T., Delhi.
6. Mahesh Chand. Study of growth and phase transformations of gel-grown polytypic crystals of lead iodide by cleavage. University of Delhi.
7. Pathak, Ghanshyam Das. Production and study of alloys by solid liquid diffusion method. Awadhesh Pratap Singh University.
8. Raj Lalan Singh. Time variation of cosmic ray diurnal anisotropy at relativistic energies. Awadhesh Pratap Singh University.
9. Satyanarana Murty, A. Studies in molecular electronic structure of amides. Osmania University.
10. Sundara Raja, V. Studies in solid state physics : Third order elastic constants of single crystals of Indium antimonide and gallium antimonide. Sri Venkateswara University.

11. Vaid, Jagdish Kumar. AC conductivity of semiconducting transition metal ion phosphate glasses. University of Delhi

12. Vijayvargya, Vishvaprasanna. Studies of some metals and their compounds by X-ray spectroscopic methods. Indore University.

Chemistry

1. Agarwal, Gopal. Chemical investigation of some members of family umbellifera. University of Jammu.
2. Barnabas, Shama. Variation and comparative evolution of hemoglobins in some species of three mammalian orders : Primates, rodents and ungulates during their descent. University of Poona.
3. Chacko, Jacob. Studies on some lanthanide and actinide complexes. University of Kerala.
4. Chandrasekharan, V. Studies in Oxygen heterocyclics; Synthesis of cannabinoids and their metabolites. I. I. T., Bombay.
5. Dahiya, Hari Pal. Polarography of chalcones and flavanones. University of Delhi.
6. Dandge, Dileep Keshav. Studies in syntheses of isocyanates and polymers using isocyanates. University of Poona.
7. Gupta, Suresh Kumar. Biochemical studies on *Aspergillus parasiticus*. University of Poona.
8. Harnesswala, Rashida Akberhusein. Retention studies following (n, p) recoil in some antimonates and iodates. University of Poona.
9. Jain, Surender Kumar. Electrical conductance of low melting binary nitrate mixtures. University of Delhi.
10. Kapahi, Asha. Metal chelates of some orthohydroxy ketoximes. University of Delhi.
11. Kundra, Surender Kumar. Substituted azines as analytical reagents, University of Delhi.
12. Masih, Amjed. Studies in heterocyclics : Kinetics and reaction mechanism of the formation of thiozoles, thiazolophiridine etc. Punjabi University.
13. Mitra, Apurba Kumar. Some studies on hydraulic and other properties of high alumina cements. University of Calcutta.
14. Mukherjee, Srikumar. Study of metal complexes in solution. Indian School of Mines, Dhanbad.
15. Saindane, Manohar Tukaram. Synthetic and stereochemical studies in cyanomalonin series. University of Poona.
16. Sarda, Vijay. Polarography of fluorescein derivatives. University of Delhi.
17. Sarkar, Rita. Phytochemical studies on the order rutales. University of Calcutta.
18. Seshagiri, S. N. Synthesis of some recently isolated isoflavones. University of Delhi.
19. Sumesh Chander. Some new polyhydroxyflavones from Dikamali gum and synthesis of related flavonoids. University of Delhi.
20. Shah, Joel Edwin. Sorption and related studies with ion exchangers. Maharaja Sayajirao University of Baroda.
21. Sharma, Tejprakash. Physico-chemical studies on some metal complexes. Vikram University.

22. Thappa, Rajinder Kumar. Chemical investigation on some members of the genus *cymbopogon* and *zanthoxylum budrunga* University of Jammu.

23. Undavia, N. K. Studies on hydroxy ketones and optical activity. Saurashtra University.

24. Vitaldas, Mani Uliyar. Studies on hydroxyproline containing proteins in sandal, *Santalum album* L. University of Madras.

Earth Sciences

1. Dessai, Ashok Govind. Geology of the manganese ore deposits of Sanguem District, Goa, India. University of Poona.

2. Gadekar, Digamber Ramchandra. Geology of the tertiary rocks of South-Gujarat with special reference to their stratigraphy and sedimentation. Maharaja Sayajirao University of Baroda.

3. Mallick, Kumarendra. Problems associated with transitional boundary in depth sounding by DC resistivity, magnetotelluric and electromagnetic methods. Indian School of Mines. Dhanbad.

4. Shukla, Ashok Kumar. The geomorphology of the Southern part of the middle Aravali Range. Rajasthan. University of Saugar.

Engineering & Technology

1. Anjaneyulu, E. Some studies on the analysis of fibre reinforced plastics, I. I. T. Bombay.

2. Babu, K. Satish. Incorporation of polymers in and onto collagen, hides, skins and leathers and study of their physico-chemical properties. University of Madras.

3. Bagchi, Harijan. Thermoelectric phenomenon in machining. University of Poona.

4. Basudhar, P. K. Some applications of mathematical programming techniques to problems in geotechnical engineering, I. I. T. Kanpur.

5. Gangadharan, G. Generalised characteristics for multi-input protective relays. University of Madras.

6. Jagadeesh, T. R. Laminar flow establishment and stability of fully developed flow in elliptic ducts. I. I. T., Bombay.

7. Kedia, K. K. Shells on elastic foundations, I. I. T., Kanpur.

8. Pal, Jayanta Kumar. Design of control systems by state optimal control theory. University of Calcutta.

9. Paranjothi, S. R. Preventive control and diakoptical optimization of power systems. I. I. T., Kanpur.

10. Patodi, S. C. Geometric nonlinear analysis of plates and shells by discrete energy method. I. I. T. Bombay.

11. Rao, J. V. N. Optimum aseismic design of multistory frames. I. I. T., Kanpur.

12. Satyamurthy, N. A study in mass transfer : Absorption of oxygen by aqueous sodium sulphite solutions. University of Madras.

13. Sherief, N.A. Some studies on the analysis of pressure vessels. I.I.T., Bombay.

14. Srivastva, H. M., Queueing theory applied to data communication. I.I.T., Bombay.

15. Varma, R. L. A study of selective oxidation of butenes to maleic anhydride over vanady phosphate catalyst. I. I. T., Kanpur.

BIOLOGICAL SCIENCES

Biochemistry :

1. Bhaskar Rao, A. Studies on the carbohydrate metabolism of cerebral cortex of rat in leptazol-induced convulsions and the effect of gamma-aminobutyric acid. University of Madras.

2. Dhanam, Mary. Studies on histidine ammonia-lyase from monkey liver. University of Madras.

3. Krishan Lal. Biosynthesis of fatty acids in plants. Punjab Agricultural University.

4. Sarla Rani. Studies on the enzymes of phosphate metabolism in guar, *Cyamopsis tetragonoloba* L. Haryana Agricultural University.

5. Sivakami, S. Studies on maltase-glucoamylase complex of the rabbit small intestine. University of Madras.

6. Surolia, Avadhesha. Interaction of lectins with glycoproteins and glycolipids. University of Madras.

Experimental Biology

1. Krishnamurthy, L. Systems analysis and optimization of land use-system with reference to a grazing land. Saurashtra University.

Marine Biology

1. Leea Devi, D. Physiological and histochemical studies on marine wood borers and foulers. University of Madras.

Microbiology

1. Desai, Anjana Jitendra. Some biochemical Properties of rhizobium japonicum. Maharaja Sayajirao University of Baroda.

1. Desai, Harish Gulabrai. Studies on carotenogenesis in molds with special reference to *blakeslea trispora*. Maharaja Sayajirao University of Baroda.

Botany

1. Andley, Usha Prasad. Studies of structural and functional changes in chloroplast membranes. Jawaharlal Nehru University.

2. Behera, Bharati. Cytogenetic and biosystematic studies in *amaranthaceae*. Utkal University.

3. Dey, Sunil Chandra. Physiology of seed germination in sunflower. Punjab Agricultural University.

4. Kallarackal, Jose. Ontogenetic and cytochemical studies on the ovule of *linaria bipartita* (vent.) wild. University of Delhi.

5. Khanna, Ratna. Morphogenetic studies on *anethum graveolens* L, and *lobularia maritima* desv. University of Delhi.

6. Mittal, Arun Lata. Applied research in algae allergens of Delhi. University of Delhi.

7. Prabhu, Atmaram Vasudeo. Studies into lichens of Western India. University of Poona.

8. Rairkar, Sandhya Ramchandra. Studies into some Indian lichens. University of Poona.

9. Sethi, Minakshi. The cotton plant : A refractory system for induction of adventive embryony : Probable role of gossypol as an explanation of the negative responses. University of Delhi.

Zoology

1. Dar, Natasha. The role of house dust mites in causation of bronchial asthma and allergic rhinitis in India. University of Delhi.

2. Johri, Gyanendra Narayan. Certain immunological aspects of mesocestoides : Tetrathyridia studies on immunoeffusion, immunoelectrophoresis and serum protein analysis. D. Sc. Vikram University.

3. Mahove, Jyoti. Histological, histochemical and physiological studies on accessory, reproductive organs of certain insects. Vikram University.

4. Misra, Akhilesh Chandra. The hoplopleurid lice of the Indian subcontinent : Anoplura-hoplopleuridae. University of Poona.

5. Mukhopadhyay, Rabindranath. Adrenogonadal relationship in avian reproduction. University of Burdwan.

6. Mukhopadhyay, Sumanta. On spinning apparatus of two non-orb-weaving spiders, araneae. University of Burdwan.

7. Putatunda, Amita Kumar. A brief cytological and cytochemical studies of blood, alimentary tract, liver, spleen and kidney of Adult bufo melanostictus and rana tigrina. University of Burdwan.

8. Satyan, P. Biochemical studies on myriapods: Inorganic and organic composition of haemolymph and fat body of the millipede spirostriptus aspthones. Sri Venkateswara University.

9. Snehlata Singh. Ecophysiological study of medicinal plant, ammannia baccifera linn. Vikram University.

Veterinary Science

1. Ambika Prasad Singh. A study on the osteogenic property of homogenoas bone graft in bovines. Haryana Agricultural University.

2. Dhanda, Om Parkash. Studies on some biochemical attributes of buffaloe semen and its preservation. Haryana Agricultural University.

3. Kitab Singh. Studies on some of the biochemical, histopathological and therapeutic aspects of partient haemoglobinuria in buffaloes. Haryana Agricultural University.

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Buch, Pilloo. *Measurement of innovation : An Anthology of tools*. Ahmedabad, Sahitya Mudranalaya., 1976. 88p.

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Lindvall, C. M. *Testing and evaluation; An introduction*. New-York, Harcourt Brace, 1961. viii, 264p.

Mbughuni, L. A. *Cultural policy of the United Republic of Tarzina*. Paris, Unesco., 1974. 72p.

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Paris, O.E.C.D. *Classification of educational systems : Summary volume*. Paris, Author, 1975. 49p.

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Rowntree, Derek *Educational technology in curriculum develop-ment*. New York, Harper & Row., 1974. x, 197p.

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U. K. Schools Council. *Experiment in oral examining of chemistry*. London, Methuen, [c 1971] 103p.

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Vernon, Philip E. *Certificate of secondary education : An introduction to objective-type examinations*. London, H.M.S.O. 1964. 20p.

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CLASSIFIED ADVERTISEMENTS

JIWAJI UNIVERSITY, GWALIOR
No. F. 538/D/77/355 dated 1.2.1977
ADVERTISEMENT

Applications are invited on the prescribed form obtained from the Registrar on payment of Re. 1/- in cash or by crossed I.P.O. with a self addressed envelope of 23 x 11 cms. size with postage stamp worth Rs. 2.40 affixed on it for the following posts :—

Applications alongwith copies of testimonials and certificates much reach the Registrar's Office on or before 14th March, 1977.

Qualification :

1. Professors :— (a) A first or second class Master's degree of an Indian University or an equivalent qualification of a foreign university in the subject concerned (b) Either a Degree of the Doctorate standard or publis-

less than 10 years experience of post graduate teaching and experience of successfully guiding research.

2. Readers :—

(a) (b) and (c) same as for Professor with postgraduate teaching experience of five and three years experience of guiding research.

3. Lecturers :—

(a) A First or Second class Master's degree of an Indian University or equivalent qualification of a foreign University in the subject concerned (b) A research degree in the subject or experience of teaching degree and or postgraduate classes will be a desirable qualification.

Desirable Qualification :—

- (i) Consistently good academic record in all examinations.
- (ii) Working knowledge of Hindi.

Age limit :—

Not more than 55 years for Professor, 50 years for Reader and 40 years for Lecturer on 1st March, 1977.

Preference will be given to Scheduled Castes and Scheduled Tribes Candidates, if otherwise qualified.

Contributory Provident Fund, dearness, other allowances and benefits will be available as per University rules. Appointment will be made on two years probation.

Candidates already in service must submit their applications through proper channel. Candidates called for interview shall bear their own expenses for the journey.

Applications for each post be sent separately alongwith a crossed I.P.O. worth Rs. 7.50 for the posts in category (I) & (II) above and I.P.O. worth Rs. 5.00 for the posts in category (III) in the name of the Registrar, Jiwaji University, Gwalior, so as to reach on or before the last date for receiving applications as indicated above.

Applications without the prescribed application fee and/or incomplete in any respect and or received after the last date will not be considered.

A.K. Bhattacharya
REGISTRAR

Post	No.	Specialisation
I. Professors		
1. Botany	One	Plant Physiology/Ecology or Plant Pathology.
2. Zoology	One	Physiology and/or Endocrinology (Not necessarily vertebrate Physiology or endocrinology) Cell Biology/Cytogenetics/Animal Ecology/Radiation Biology or Experimental Zoology.
3. Mathematics	One	Pure Mathematics/Applied Mathematics/Functional Analysis/Topology.
4. Economics	One	Economic Growth including theory of Economic development, planning and policy.
II. Readers.		
1. Chemistry	One	Physical Chemistry.
2. Physics	One	Solid State Physics.
III. Lecturers		
1. Botany	One	Genetics/Molecular Biology/Plant Pathology or Ecology. Physiology/Endocrinology/Cell Biology Cytogenetics/Animal Ecology/Radiation Biology or Experimental Zoology/Parasitology/Invertebrate Zoology or Toxicology
2. Zoology	One	One in Physical/Inorganic Chemistry and other in Physical Organic Chemistry/Solid State Chemistry.
3. Chemistry	Two	Nuclear Physics or Electronics.
4. Physics	Two	Pure Mathematics/Applied Mathematics/Statistics.
5. Mathematics	Two	Econometrics, Mathematical Economics or Advanced Statistics/Economic Growth.
6. Economics	Two	

Scales of Pay :—

1. Professor Rs. 1100-50-1300-60-1600
2. Reader Rs. 700-50-1250
3. Lecturer Rs. 400-40-800-50-950

The above salary scales are likely to be revised, in which case the Qualifications as prescribed for revised scales will be applicable.

hed work of high Standard (c) Specialisation in the relevant branch of the subject as mentioned against the post concerned (d) Not

**INDIAN INSTITUTE OF
TECHNOLOGY, KHARAGPUR**

Advertisement No. R/6/77

Applications are invited for the undermentioned posts in the Cryogenics Engineering Centre, at the Indian Institute of Technology, Kharagpur (West Bengal).

A Cryogenics Engineering Centre has been established at the Indian Institute of Technology, Kharagpur in 1976. It is proposed to offer extensive facilities for R & D work in Cryo-technology to develop indigenous design expertise. The programme of work will be challenging to persons willing to take up research oriented time bound projects.

POSTS :

I. PROFESSOR : (Cryogenics System Design)

Scale of Pay : 1500-60-1800-100-2000-125/2-2500/-

Age : Preferably below 50 years.

Qualifications :

Essential : First Class Master's Degree/Dotorate Degree in Engineering/Science with at least 10 years' experience in research/development in an Institute of University standard.

Desirable : (a) Experience in Cryogenic System design, (b) Research publication in reputed journals, (c) Experience in guiding research and ability to organise laboratories in Cryogenic System design.

Job Description :

He will be responsible for initiating and planning Research Programme in Cryogenic Systems. He will also be responsible for developing and organising Cryogenic Engineering Laboratories and will take part in training programmes.

N.B. : Persons having considerable experience in industry engaged in the design and manufacture of Cryogenic Equipment but not having adequate educational qualifications, prescribed above, may also apply but the Institute reserves the right to offer them appointment in a different grade of salary and/or different designation.

H. ASSISTANT PROFESSOR :

(Cryogenics Equipment Design/ Cryogenic Measurements)

Scale of pay : Rs. 1200-50-1300-60-1900/-

Age : Preferably between 30 and 45 years.

Qualifications :

Essential : First Class Master's degree/Doctorate Degree in Engineering/Science with a minimum of

five years experience in the design of Thermal Systems/Low Temperature Measurements in an Institute of University standard.

Desirable : (a) Publications in reputed Journals, (b) Experience in guiding research.

Job Description :

He will be responsible for carrying out specific Design Projects taken up by the Centre and design instruments for Cryogenic Systems. He will also assist in the Short-term and other training programmes.

III. LECTURER :

(Thermal Engineering/Low Temperature Physics/Plant Design for Heat and Mass Transfer/Machine Design)
Scale of pay : Rs. 700-40-1100-50-1600/-

Age : Preferably between 25 and 38 years.

Qualifications :

Essential : First Class Master's Degree or second class Master's Degree with Doctorate Degree in Engineering/Science. At least two years research/industrial experience in Thermal Engineering/Machine Design/Low Temperature Physics/Plant Design for Heat and Mass Transfer.

Desirable : Publication in reputed journals.

**IV. SENIOR RESEARCH ASSISTANT
(System Design/Transport Process/
Low Temperature Measurements)**

Scale of pay : Rs. 550-25-750-EB-30-900/-

Age : Preferably below 30 years.

Qualifications :

Essential : A good Bachelor's degree followed by a Master's degree in Engineering/Science. Adequate research experience in Cryogenic Instrumentation/Vacuum Circuit Design/Thermal Engineering/Transport phenomena.

**V. JUNIOR RESEARCH ASSISTANT
(Plant Design/Low Temperature
Measurements/Vacuum Circuit Design)**

Scale of pay : Rs. 425-15-500-EB-15-560-20-700/-

Age : Preferably below 30 years.

Qualifications :

Essential : A good Bachelor's degree followed by a Master's degree in Engineering/Science. Adequate research experience in Cryogenic Instrumentation/Vacuum Circuit Design/Thermal Engineering/Transport phenomena.

N.B. : All posts carry Salary Scale as mentioned against each plus usual D.A. at admissible rates. Some posts are on contract.

Application Form may be had from the Registrar of the Institute on request alongwith an unstamped self-addressed envelope of size 23 cm. x 10 cm.. Application accompanied with an application fee (*non-refundable*) of Rs. 7.50 for posts under category I, II & III and of Rs. 3.00 for posts under category IV & V (Rs. 1.87 and 0.75 respectively for SC/ST candidates) payable by means of crossed Indian Postal Order to the Indian Institute of Technology, Kharagpur at Kharagpur-2 Post Office should reach the Registrar, I.I.T., Kharagpur by the 12th March, 1977.

**JAWAHARLAL NEHRU
UNIVERSITY**

Advt. No. Aca.- III/1/77

Applications are invited for the following faculty positions :

A. SCHOOL OF LANGUAGES :

1. Professor/Senior Fellow (Linguistics)
2. Professor/Senior Fellow (German)
3. Professor/Senior Fellow (Spanish)
4. Professor/Senior Fellow (Persian)
5. Assistant Professor/ Associate Fellow (French)

Essential Qualifications :

For posts Nos. 1-4

(a) Consistently good academic record with at least a high second class Master's degree in the relevant discipline or an equivalent qualification from an Indian/Foreign University; (b) A Doctorate degree or published work of an equally high standard; and (c) About ten year's experience of teaching and/or research.

For post No. 1

1. Areas of specialisation :
 - A. Theoretical Linguistics.
 - B. Applied Linguistics.
2. Competence in areas of Applied Linguistics such as language teaching (including Indian/Foreign languages), materials production, translation, curriculum development and teacher training.
3. Special interest and ability in designing and running postgraduate and research programmes in linguistics with an interdisciplinary bias in social sciences and computational sciences.

For post No. 2

Specialisation in materials production and Lexicology—Lexicography with special reference to German & Indian languages and/or specialization in Modern German Literature, Theory of Literature and Comparative Literature in social contexts, and Theory and

practice of translation with reference & Literature, Social Studies and Natural Sciences.

For post No. 3

Specialisation in Spanish Literature of the Golden Age and/or Contemporary Latin American Literature and/or Methodology of teaching Spanish as a foreign language.

For post No. 4

1. Specialization in Modern Persian Literature
2. Methodology of teaching Modern Persian to foreigners.
3. Production of Text-books and other teaching aids for Modern Persian language.

For post No. 5

(a) Consistently good academic record with at least a high second class Master's degree in French or an equivalent qualification from an Indian/Foreign University; (b) A Doctorate degree or published work of an equally high standard; and (c) Some teaching and/or research experience.

Note :— (a) and (b) are for Assistant Professor; and (a) and (c) are for Associate Fellow.

Desirable Qualifications :

For post No. 1

Specialization in computational linguistics.

For post No. 4

Knowledge of classical Persian and Indo-Persian.

For post No. 5

(a) Well-versed in English and good knowledge of History of French Cinema; (b) Experience in teaching interpretation from French into English and from English into French; and (c) Good knowledge of at least one of the Indian national languages.

SCHOOL OF SOCIAL SCIENCES

Centre for the Study of Social Systems

6. Professor/Senior Fellow in Social Anthropology.
7. Associate Professor/Fellow in Sociology.
8. Assistant Professor in Sociology

Qualifications :

For post No. 6

Essential : (a) Consistently good academic record with at least a high second class Master's degree in Social Anthropology or an equivalent qualification from an Indian/Foreign University; (b) A Doctorate degree or published work of an equally high standard; (c) About ten year's teaching and/or research experience; and (d) Substantial experience of guiding research.

Specialisation in any one or more of the following areas :

- (i) Study of agro—industrial as well as rural and tribal Social Structures;
- (ii) Comparative Study of South and South-East Asian Social Structures; and
- (iii) Social Anthropology of Peasant Society.

For post No. 7

Essential : (a) Consistently good academic record with at least a first or high second class Masters degree in Sociology or an equivalent qualification from an Indian/Foreign University; (b) A doctorate degree or published work of an equally high standard; and (c) About five years experience of teaching and/or research

Specialisation in any one or more of the following areas :

- (i) Sociology of Modernization and Change;
- (ii) Sociology of complex Organizations;
- (iii) Sociology of Professions and Occupations;
- (iv) Industrial Sociology.

For post No. 8

Essential : (a) Consistently good academic record with at least a high second class Master's degree in Sociology or cognate social science discipline or an equivalent qualification from an Indian/Foreign University; (b) A doctorate degree or published work of an equally high standard; and (c) Some experience of teaching and/or research in one of the following :

- (i) Research Methodology and Technique;
- (ii) Population and Society;
- (iii) Education and Society; and
- (iv) Sociology of Organizations.

Scales of Pay :

Professor/Senior Fellow :

Rs. 1500-60—1800-100-2000-125/2-2500.

Associate Professor/Fellow :

Rs. 1200-50-1300-60-1900

Assistant Professor/Associate Fellow

Rs. 700-40-1100-50-1600

plus usual allowances as admissible to the members of the staff of the Central Universities.

Relaxation in any of the qualifications may be made (a) in favour of persons of eminence or of high academic professional distinction and (b) in exceptional cases, where adequately qualified persons are not available but are otherwise found suitable for the respective positions. It will also be open to the University to consider the names of suitable candidates who may not have applied.

The selected candidates will be expected to participate in the teaching and research programmes in the concerned disciplines in other Schools of the University as well as in the programme offered in their own Centres of Studies.

Normally appointment of Senior Fellows, Fellows and Associate Fellows is made on contract basis for a period ranging from one to three years.

Benefits of C. P. Fund-cum-Gratuity/G. P. Fund-cum-Pension-cum-Gratuity are available as per University rules.

Persons already in employment should route their applications through proper channel. Due consideration will be given to candidates belonging to SC/ST at the level of Assistant Professor/Associate Fellow.

Second class (mail) rail fare (both ways) will be paid to candidates invited to appear for interview from outstation by the shortest route subject to the production of rail receipt.

Applications, on the prescribed form, obtainable free of cost from the University by sending a self-addressed and stamped envelope of 23 cm. x 10 cm. size to the Co-ordinator (Academic Affairs), Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110057, should reach him latest by 15th March, 1977.

Candidates from abroad applying for faculty positions, may apply on plain paper (but their applications should reach the University by the last date) furnishing all the relevant information such as their names; date and place of birth; marital status; nationality; state of domicile; postal and permanent addresses; father's name and address; academic and professional attainments; full details of (a) publications, and (b) research projects undertaken; Language (s) known; details of visits to foreign countries; and the names and addresses of at least two persons well acquainted with the candidates professional work who should also be requested by the candidate to forward to the Co-ordinator (Academic Affairs) confidential report concerning the candidate.

LUCKNOW UNIVERSITY

ADVERTISEMENT NO. 3/1977

Applications are invited for the following posts :—

1. Two Professors of Education in the grade of Rs. 1500-60-1800-100-2000-125/2-2500.

Qualifications :

Essential—1(a) A doctorate in the subject of study concerned or a published work of a high standard in that subject; and

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic

career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks) Master's Degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work, is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1:

(2) Experience of teaching post-graduate classes for not less than seven years and/or having conducted and successfully guided research work for seven years in a recognised Institution and having published work of High standard in the subject concerned.

Preferential—High academic distinctions.

2. Three Readers in Education in the grade of Rs. 1200-50-1300-60-1900:

Qualifications:

Essential—1(a) A doctorate in the subject of study concerned or a published work of a high standard in that subject; and

(b) Consistently good academic record (that is to say the overall record of all assessments throughout the academic career of a candidate) with first or high second class) that is to say, with an aggregate of more than 54% marks) Master's Degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

(2) Experience of teaching honours/post-graduate classes for not less than five years and published research work of high standard in the subject.

Preferential—Experience of teaching post-graduate classes and guiding research.

Lecturers in the grade of Rs. 700-40-1100-50-1600.

3. Three Lecturers in Education

4. One Lecturer in Chinese

Qualifications:

Essential—(a) A doctorate in the subject of study concerned or a published work of a very high standard in that subject; and

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks) Master's Degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) supra.

Preferential—Experience of teaching degree/honours/post-graduate classes for two years.

GENERAL :

For purposes of qualifications required for the above posts, the Degree obtained in a subject taught in a Department which is subsequently constituted into separate Departments, shall be deemed to be degree in the subject concerned for the newly constituted Departments.

Benefits of Provident Fund available as admissible under the rules on confirmation. Period of probation for all posts is one year. It is not necessary to fill any/all of the advertised posts.

For the posts of Lecturers, other things being equal, preference will be given to Scheduled Castes/Tribes candidates, who are considered fit. Such candidates should indicate in their applications that they belong to Scheduled Castes/Tribes, attaching certificate from the District Magistrate of the District to which they belong. No other certificate for this purpose will be entertained. In case of Scheduled Castes/Scheduled Tribes candidates interviewed by the Selection Committee, if suitable candidates are not available for appointment to the posts of Lecturers, the Selection Committee may recommend appointment of suitable candidate as Research Associate in the scale of Rs. 700-1300 for a period upto three years and these persons could later compete for the posts of Lecturers as and when vacancies occur.

Applications on the prescribed form (available on request, accompanied with a self-addressed envelope of size 23 cm x 10 cm, free of cost, from the Office of the Registrar) with recent testimonials, publications etc. should reach the Registrar, Lucknow University by Tuesday, March 15, 1977. The candidates who are in service must send their applications through proper channel. Applications Forms to outstation candidates will be issued by post upto Tuesday, March 8, 1977.

Those who have applied for the above posts in response to our advertisement No. 13/1975 dated November 1, 1975 need not apply afresh as their old applications will be considered. Such candidates may, however, intimate their additional qualification and attainments obtained during this period.

Kaushal Kishore
Deputy Registrar

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 33/76-77

Applications, on the prescribed form, are invited for the following posts:

1. Instructor (Moulding), Workshop, Engineering College.
Scale Rs. 425-15-500-EB-15-560-20-700 plus allowances.

Qualifications : Diploma in the relevant branch with experience of atleast eight years in a recognised institute.

2. Sr. Instrument Mechanic, Workshop, Engineering College.

Scale Rs. 425-15-500-EB-15-560-20-700 plus allowances.

Qualifications : Trade Certificate in Turning, Milling with atleast five years experience in a recognised institution.

Desirable : Should be thoroughly conversant with all types of machines like lathes, Milling Shaper, Grinder, Slotter, Planers, Presses etc. and able to guide and work with Turners, Machinists and other skilled workmen in the machine shop.

3. Studio Assistant (Record Lab.). Women's Polytechnic.

Scale Rs. 380-12-440-EB-15-560-EB-20-640 plus allowances.

Qualifications : Intermediate with atleast three years experience as Record Keeper in Govt./Semi Govt. Industrial Organisation of repute.

4. Head Mali, Gardens & Lands Department.

Scale Rs. 260-6-326-EB-8-350 plus allowances.

Qualifications : Should be able to read and write. May have passed VIII class exam. Two years training in gardening at some Govt. Garden or Nursery and atleast five years practical experience as a Head Mali or 15 years experience as a Mali in a Govt. or Public Garden.

Age : Not more than 40 years.

5. Semi Professional, Geography Department.

Scale Rs. 330-10-380-EB-12-500-EB-15-560 plus allowances.

Qualifications : B.Lib. Sc. or C. Lib. Sc. with five years experience of work in a recognised Library.

6. Semi Professional, Sociology Department. Scale Rs. 330-10-380-EB-12-500-EB-15-560 plus allowances.

Qualifications : B. Lib. Sc. or C. Lib. Sc. with five years experience of work in a recognised library.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 cm x 10 cm. Last date for receipt of applications is 19th March, 1977. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

Jamalur Rahman
Registrar

**WALCHAND COLLEGE OF
ENGINEERING**
Vishrambag, Sangli 416415

Applications, in prescribed forms, are invited for the following posts at this College, so as to reach the office of the Principal, on or before 15th March 1977.

Sr. No.	Post	No. of Posts
1.	Professor in Electrical Engineering	1
2.	Assistant Professor in Electrical Engineering	1
3.	Lecturer in Electrical Engineering	2
4.	Lecturer in Civil Engineering	2

Details of the qualifications, experience, pay-scales etc, necessary for the posts, and the prescribed form of application for all the posts can be had from the College on request by sending self addressed envelope (9" x 4" size) with necessary Postage stamps.

All the posts are reserved for candidates of Scheduled Castes, Scheduled Tribes and Other Backward Class.

Dated : 5th Feb, 1977. **PRINCIPAL**

**INDIAN INSTITUTE OF TECHNOLOGY
IIT POST OFFICE
KANPUR-208016**

Advertisement No. 5/77

Applications are invited for 15 (Fifteen) posts of Professors, Assistant Professors, and Lecturers in the Department of Electrical Engineering. The department is seeking individuals with ability and aptitude for teaching research and development.

1. **Professor** : Scale of pay Rs 1500-60-1800-00-2000-125/2-2500.

Qualifications :

Doctorate degree with an excellent academic record with at least 8 years of professional experience of good quality outside the work for the degree

OR

M. Tech. degree with excellent academic record and 15 years of industrial experience with brilliant record, outside the work for the degree.

The candidates must have demonstrated ability in teaching and independence in research evidenced by significant contributions by way of publications of good quality in journals of repute or developmental projects work of merit in any one of the following areas :

- (i) Power Systems,
- (ii) Electronic Circuits,
- (iii) Electronic Devices,
- (iv) Communication, (v) Computers, (vi) Controls,
- (vii) Power Electronics,
- (viii) Networks and Systems.

2. **Assistant Professor** Scale of Pay Rs. 1200-50-1300-60-1900

Qualifications :

Doctorate degree with excellent academic record with atleast three years of professional experience.

OR

M. Tech. degree with excellent academic record and atleast seven years of industrial experience.

The candidates must have demonstrated ability in teaching, and independent research work as evidenced by adequate number of research publications of good quality in journals of repute or developmental project work in any of the following areas ;

- (i) Power Systems, (ii) Electronic Circuits, (iii) Communications, (iv) Computers, (v) Controls, (vi) Power Electronics and (vii) Networks and Systems. Specialised experience in any one of the following is desirable. Power system security and Reliability, High Voltage Engineering, Digital and Linear Circuit Design, Integrated Circuit Design,

Device, Modelling, Computer-aided Design, Active Networks, Instrumentation and Transducers, Digital Communication, Optical Communication, Signal Processing, Computer Architecture, Micro-processor Applications, Real Time Computer Control, Industrial Drives, Bioelectronics and Design of Heavy Electrical Machines.

3. **Lecturers** : Scale of Pay: Rs. 700-40-1100-50-1600

Qualifications :

Doctorate degree with excellent academic record

OR

M. Tech. degree with excellent academic record and at least three years of teaching, research/industrial experience.

The candidate must have ability for good teaching and independent research, evidenced by adequate publications or developmental work.

Areas of specialisations are the same as those mentioned above for Assistant Professors.

The Department of Electrical Engineering has, at present 35 faculty members and an active post graduate programme with about 40 Ph. D. students and 80 M. Tech. students. The Department is actively involved in sponsored research and development projects funded by Governmental agencies and Industry. There are well equipped laboratories including a semiconductor device laboratory with clean room facilities. The Institute also has a Biosystems Laboratory and Laser Laboratory. There is a well established Computer Centre having IBM 7044, IBM 1401, IBM 1800, PDP 1 and TDC-316 computers and a group of experienced programmers. In addition the following Central facilities are available.

Liquid nitrogen and liquid helium plants, NMR, EPR, Mass Spectrometer, X-Ray Plant, UV and IR Spectrometers, Glass blowing shop, crystal growth, facility, central instrumentation laboratory, precision machine shop, electron microscope, besides a large workshop for the fabrication of specialised research apparatus. The Institute has a well stocked library with more than 1,00,000 volumes and 1,300 periodicals.

The Institute has inter-disciplinary programmes in the areas of Material Science, Computer Science, Nuclear Engineering etc. Candidates may be considered for joint appointment with the inter-disciplinary programmes.

Excellent residential housing, when available is provided on campus. The campus facilities include a primary and a

higher secondary schools, a health centre and a shopping centre. Besides there is a modern swimming pool.

In the category of Lecturer, one post will be reserved for SC/ST candidates. In the event of non-availability of SC/ST candidates the reserved post would be treated as dereserved.

Posts are permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or GPF-cum-Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year the appointment will be on probation. Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Govt. employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 cm x 10 cm size. Applications should be accompanied by a postal order for Rs. 7.50 (Rs. 1.87 for Schedule Castes/Tribes candidates).

Applicants from abroad may apply on plain paper enclosing a complete bio-data and names of three referees from whom reference letters may be obtained.

All applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016, U P. (India) on or before **15th March, 1977**.

SAMBALPUR UNIVERSITY JYOTI VIHAR, BURLA

Advertisement

No. 3508/TDS Dated 3-2-77

Applications in the prescribed forms are invited for the following posts in the P.G. Departments of the Sambalpur University as stated below.

1. Professor — One each in Economics and Home Science.
2. Reader — One each in Library Science and Biological Sciences.
3. Lecturer — One each in English, Political Science, Chemistry, and Home Science.

Scales of Pay

Professor	—	Rs. 1500-60-1800-100-2000-125/2-2500/-
Reader	—	Rs. 1200-50-1300-60-1900/-
Lecturer	—	Rs. 700-40-1100-50-1600/-

Age of Retirement 60 years.

1. Qualification for Professor of Economics/Home Science

- (i) At least a 1st or Higher Second class Master's degree in the subject with 55% of marks or grade B+
- (ii) A doctorate Degree or published work of equivalent standard.
- (iii) Experience in conducting and guiding research work for a considerable period.
- (iv) Independent published work of High Standard in addition to requirements in (ii) above.
- (v) Teaching experience for at least ten years in a college or University with at least 7 years experience in teaching P.G./Hons. Classes.
- (vi) Specialisation as mentioned below in the following :

Subject	Specialisation
Economics	Preferably in Econometrics or Mathematical Economics.

If suitable candidates in Econometrics or Mathematical Economics are not available, specialists in other branches of Economics will also be considered for appointment.

2. Qualification for the post of Reader in Library Science and Biological Sciences.

- (i) At least a 1st or High Second Class Masters Degree in the respective subject with B + or 55% of marks. And for Reader in Biological Sciences atleast a 1st or High Second Class Master's Degree in Botany or Zoology or Biological Sciences with B + or 55% of Marks.
- (ii) Doctorate Degree or published work of equivalent standard.
- (iii) Independent published research work in the reputed journals.
- (iv) Teaching experience for atleast 8 years out of which 5 years must be in P.G./Hons. Teaching in a College or University.
- (v) Capacity to guide research work.
- (vi) Specialisation as mentioned below in the following subject.

Subject	Specialisation
Biological Sciences	Cytogenetics/Physiology/Ecology/Bio-chemistry.

Candidates having qualifications in the "Botany Stream" need not apply for the post of Reader in Biological Sciences.

3. Qualification for the posts of Lecturer in English/Political Science/Chemistry/Home Science.

- (i) Atleast a 1st or high second class Master's Degree in the respective subject with B + or 55% of marks.
- (ii) Atleast 2 years Teaching/research experience.
- (iii) A Doctorate Degree or Published work or an equivalent standard.

Qualification (i) as mentioned for all the posts, may be relaxed if the research work of a candidate as evident either from his/her thesis or from his/her published work is of very high standard.

A Professor may also be appointed on contract basis for a specified period.

Seven copies of the application forms will be supplied from the University Office to each candidate in person on cash payment of Rs. 10/- (Rupees ten) only. Candidates intending to receive forms by post are required to send (a) Crossed Postal Order of Rs. 10/- payable to the Finance Officer, Sambalpur University, Jyoti Vihar Burla (b) a self addressed envelope (23 cm x 10 cm) with postage stamps worth Rs. 2/- affixed to it with the words "APPLICATION FORM FOR TEACHING POSTS IN SAMBALPUR UNIVERSITY" superscribed on it. Money Order/Cheque will not be entertained.

The last date of receipt of applications in the office of the University at Jyoti Vihar, Burla, Sambalpur (Orissa) is **15-3-77**. The candidates will be required to appear for an interview before a Selection Committee at their own expenses.

All communications should be addressed to the Registrar by designation only.

Sd/- G.P. Guru
REGISTRAR

PUNJABI UNIVERSITY, PATIALA CORRIGENDUM

(Advertisement No. 114/PRO/Estt./77)

In reference to our advertisement No 113/PRO/Estt/77 published in February 16, 1977 issue it is notified that the Posts of Senior Research Fellow and Research Fellow in Sri Guru Granth Sahib Studies and Research Fellow in Research Centre in Physical Education have been designated as Research Associates and will be in the pay scale of Rs. 700-40-900-EB-40-1100-50-1300. The qualifications for the post of Research Fellow in Sri Guru Granth Sahib Studies now designated as Research Associates have also been changed and would be the same as advertised for Senior Research Fellow with Master's degree in the subject of Hindi/Sanskrit/Punjabi; well-versed in Sikh Scriptures; some knowledge of Indian Philosophy; experience of Preparing gloss; experience of writing lessons for the Correspondence Courses. The last date for receipt of applications has been extended to **11.3.77 & 16.3.77** (through proper channel) respectively.

REGISTRAR

SAMBALPUR UNIVERSITY
JYOTI VIHAR : BURLA

Advertisement

No. 3496/TDS,

Dated 3-2-77

Application in the prescribed form with attested copies of Marksheets and certificates of all examinations passed are invited for the following posts in the University College of Engineering, Burla.

3. Lecturer in Electronics and Telecommunication Engg.

Essential :

- A 1st class Master's Degree in Electronics and Tele-communication Engineering with good academic record.
- Two Years industrial or Professional experience.

I	Name of the post	Scale of pay	Nos. of Posts
1.	Professor of Electronics and Telecommunication Engineering.	Rs. 1500-60-1800-100-2000-125/2-2500	One
2.	Reader in Electronics and Telecommunication Engineering.	Rs. 1200-50-1300-60-1900/-	Two
3.	Lecturer in Electronics and Telecommunication Engineering.	Rs. 700-40-1100-50-1600/-	Three
4.	Lecturer in Mechanical Engineering.	Rs. 700-40-1100-50-1600/-	One

(All the posts carry C. P. F-cum-Gratuity benefits as would be sanctioned by the University from time to time)

II. Qualifications

1. Professor of Electronics and Tele-Communication Engg. Essential

- A first class Master's Degree in Electronics and Tele-communication Engineering.
- A Doctorate Degree or published research work of equivalent standard with a minimum of ten years experience out of which five years should be in teaching and/or research.
- Specialisation in one or more of the following fields :
Electrical and Electronics measurements and Instrumentation /Communication Theory /Microwave Engineering/ Radio T.V. and Radar Engineering/ Solid State Electronics.
- Evidence of guiding research.

Desirable :

- Teaching experience in a University standard Institution.
- Specialised Industrial experience in the field.
- Published research work of a high standard.

2. Reader in Electronics and Telecommunication Engineering

- A first class Master's Degree in Electronics and Tele-communication Engineering.
- A Doctorate Degree or published research work of equivalent standard with a minimum of seven years experience out of which five years must be in teaching and/or research.
- Specialisation in any field of Electronics and Tele-communication Engineering.

Desirable :

- Experience in guiding research.
- Teaching experience in a University standard institution.
- Published research work.

Desirable :

- Capacity to conduct independent research.
- Doctorate Degree or published research work of equivalent standard.

4. Lecturer in Mechanical Engineering Essential :

- A 1st class Master's Degree in Mechanical Engineering with good academic record.
- Two years industrial or professional experience.

Desirable :

- Capacity to conduct independent research.
- Doctorate Degree or published research work of equivalent standard.

Age of retirement—Sixty years for all the above posts.

Seven copies of the application form will be supplied from the University Office to each candidate in person on cash payment of Rs 10/- (Rupees ten only). Candidates intending to receive form by post are required to send (a) Crossed Indian Postal Order of Rs. 10/- payable to the Finance Officer, Sambalpur University, Jyoti Vihar, Burla (b) Self-addressed envelope (23×10 cm) with postage stamps worth Rs. 2.85 p affixed to it with the words "APPLICATION FORM FOR TEACHING POSTS IN THE SAMBALPUR UNIVERSITY" superscribed. Money Order, Cheque or Bank Draft will not be entertained.

The last date of receipt of application by the undersigned is 15.3.77.

Candidates will be required to appear before a Selection Committee appointed by the University at their own expenses. Selected Candidates will be required to join the post within one month from the date of issue of appointment order.

Issue of this advertisement does not make it binding on the part of the University to make appointment.

All communications should be addressed to the undersigned by designation and not by name. No interim reply to any query shall be given.

Candidates who applied in response to this office advertisement No. 31088/TDS dated 13.9.76 need not apply again

Sd/-G. P. Guru
REGISTRAR

ALIGARH MUSLIM UNIVERSITY
Advertisement No. 34/76--77

Applications, on the prescribed form, are invited for the post of Principal, Jawaharlal Nehru Medical College,

Scale : Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances as admissible under rules and non-practising allowances provided he is also Professor of the subject of his specialisation with clinical duties attached to it.

Candidates must possess a Medical qualifications included in the first or second schedule or Part II of the third schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of the educational qualifications included in Part II of the third schedule should fulfil the conditions stipulated in Section 13 (3) of the I. M. C. Act, 1956. Must possess a basic University or equivalent qualification entered in schedules under State/Central Medical Registration Act.

Qualifications : M.D./M.S./M.R.C.P./F.R.C.P./F.R.C.S. or an equivalent qualification in any branch of Medical Science. Atleast five years experience as Professor in a Medical College.

Preference will be given to those who have long experience as Professor/Head of a Department or Principal of a Medical College particularly those who have held responsible. Portion connected with the establishment of a teaching hospital. The Principal of the College will also have to work as the Chief Superintendent of the Medical College Hospital.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 X 10 cm. Last date for receipt of applications is 19th March 1977. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidate possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T. A. equal to one single second class railway fare only.

BHOPAL UNIVERSITY, BHOPAL ADVERTISEMENT NO 1/77

Applications are invited for the following posts in the scales (likely to be revised) shown against each with benefits of Dearness Allowance and Contributory fund as may be admissible under rules :

I. Deptt. of BioSciences : (School of Biological Sciences)

1. Readers (2) 700-50-1250
2. Lecturers (4) 400-40-800-50-950

Qualifications Both for Readers & Lecturers :

Must possess first or second class Master Degree of an Indian University or an equivalent degree from foreign university in Botany/Zoology/Chemistry/Bio-chemistry.

(a) A Doctor's degree or published work of an equally high standard ; and

(b) consistently good academic record with 1st or high 2nd class (B plus) Master degree in a relevant subject or an equivalent degree of a foreign university. Having regard to the need for developing interdisciplinary programmes the degrees in (a) and (b) above may be in relevant subjects,

Provided that if the selecting authority is of the view that the research work of a candidate, as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

For Lecturers only

Provided further that if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record, (due weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's degree or give evidence of published work of equally high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

EXPLANATION :

Consistently good academic record means overall record of all assessments throughout the academic career leading to the Master's degree, which should at least be B plus or high second class.

Specialisation

In one or more of the following :

Ecology, Fisheries and Limnology, Biochemistry, Animal Physiology, Instrumentation and Molecular Biology.

Experience for the post of Reader

At least five years post-graduate teaching experience in a University Teaching Department/School of Studies/affiliated College and adequate experience of successfully guiding research work is necessary.

Desirable Experience for the Post of Lecturer

Teaching experience of postgraduate class of about two years in a University Teaching Departments/Affiliated College.

Good working Knowledge of Hindi will also be considered as an additional qualification.

II. Deptt. of Regional Planning & Economic Growth (School of Social Sciences)

Lecturers (2) 400-40-800-50-950

Qualifications

Must possess first or second class Master Degree of an Indian University or an equivalent degree from foreign University. For one post of Lecturer, Masters degree in Geography with specialisation in Urban Geography and Applied Geography,

For the second post of lecturer' Masters degree in Economics with specialisation in Demography and or Economics of transportation/Regional Economics.

(a) A Doctor's degree or published work of an equally high standard, and

(b) consistently good academic record with 1st or high 2nd class (B plus) Master's degree in a relevant subject or an equivalent degree of a foreign University. Having regard to the need for developing interdisciplinary programme, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the selecting authority is of the view that the research work of a candidate, as evident either from his thesis or from his published work, is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record, due weightage being given to M. Phil or equivalent degree or give evidence of published work of equally high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

Consistently good academic record means overall record of all assessments throughout the academic career leading to the Master's degree, which should at least be B plus or high second class.

Desirable

Teaching experience of postgraduate classes of about two years in a College/University Teaching Deptt.

Good working knowledge of Hindi will also be considered as an additional qualification.

III. Central Library

1. Technical Asstt. (1) 195-5-240-6-252
-EB-6-270-10-330

Essential

Atleast Second Class B. A./B.Com/B.Sc. with second class Bachelors Degree in Library Science.

Working experience in the library will be treated as additional qualification.

IV. Deptt. of Bioscience (Biological Science) & Central Instrumentation Laboratory and Workshop:

Technical Asstts. (6) 195-5-240-6-252-
EB-6-270-10-330

(2 for Biosciences & 4 for Central Instrumentation Laboratory & Workshop).

Essential

B.Sc.—IInd Class with experience of laboratory work & techniques.

V. Correspondence Course

Lecturers (6) 400-40-800-50-950

(English-1, Pol, Science-1, Sociology-1, History-1 and Commerce-2.

Qualification

Must possess first or second class Master's Degree of an Indian University or an equivalent degree from foreign University in English/Political Science/Sociology/History/Commerce,

(a) A Doctor's Degree or published work of an equally high standard, and

(b) consistently good academic record with 1st or high 2nd class (B plus) Master's Degree in a relevant subject or an equivalent degree of a foreign University,

Having regard to the need for developing, interdisciplinary programme, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the selecting authority is of the view that the research work of a candidate, as evident either from his thesis or from his published work, is of very high standard, it may relax any of the qualifications prescribed in (b) above,

Provided further that if a candidate possessing a Doctor's Degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record, (due weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's degree or give evidence of published work of equally high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

Consistently good academic record means overall record of all assessments throughout the academic career leading to Master's Degree, which should at least be B plus or high Second Class
DESIRABLE : Teaching experience of post-graduate class of about two years in College or in University Deptt.

Good working knowledge of Hindi will also be considered as an additional qualification.

2. Age should not be more than 50 years as on 1.3.1977

3. Preference will be given to candidates belonging to Scheduled Caste/Scheduled Tribes and other backward classes.

(Contd. on page 117)

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR

Advertisement No. 3/77 (Phase-I)

Applications are invited for the following positions for the Departments/Sections/Centres/Programmes/Laboratories in this Institute :

- iv) **Mechanic Grade 'A'**
1. High School + Diploma in Engineering
OR
High School+ITI Trade Certificate + 10 years' experience.
2. Ability to manufacture, const-

Diploma in Engineering

OR

B. Sc.

vii) **Draftsman Grade I**

Diploma in Engineering + 10 years' relevant experience.

viii) **Draftsman Grade II**

High Schol+ITI Certificate in Draftsmanship+5 years' experience.

Desirable

Ability to produce finished drawings independently from rough sketches.

Name and scale of the post	No of posts	Allotment of posts
i) Foreman Selection Grade (Technical Officer) Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200	2	1 X-Ray Lab. and 1 Central Instrumentation Service.
ii) Senior Technical Assistant Rs. 550-25-750-EB-30-900	10	4 Electrical Engineering 1 Metallurgical Engineering 1 Chemical Engineering 1 Physics Department 1 Humanities and Social Sciences 1 Central Glass Blowing 1 Television Centre
iii) Technical Assistant Rs. 425-15-500-EB-15-560-20-700	12	4 Electrical Engineering 2 Metallurgical Engineering 1 Physics Department 1 Computer Science 1 Industrial Management Engg. 2 Central Instrumentation Service 1 Swimming Pool
iv) Mechanic Grade 'A' Rs. 380-12-500-EB-15-560	26	11 Electrical Engineering 2 Metallurgical Engineering 3 Chemical Engineering (2 for TA 102)
v) Mechanic Grade 'B' Rs. 330-8-370-10-400-EB-10-480		1 Central Glass Blowing 6 Central Instrumentation Service 1 Television Centre 2 Graphic Arts Section
vi) Senior Laboratory Assistant Rs. 380-12-500-EB-15-560	7	3 Metallurgical Engineering 2 Physics Department 1 Industrial Management Engg. 1 Chemical Engineering 1 Graphic Arts Section
vii) Draftsman Gr. I Rs. 425-15-500-EB-15-560-20-700	1	1 Mechanical Engineering 2 Graphic Arts Section
viii) Draftsman Gr. II Rs. 330-10-380-EB-12-500-EB-15-560	3	

Qualifications and Experience

Section - I : Essential

- i) **Foreman Selection Grade (Technical Officer)**
Degree in Engineering
OR
M.Sc.+10 years' experience
OR
Diploma in Engineering + 15 years' experience.
- ii) **Senior Technical Assistant**
M.Sc.
OR
Diploma in specified branch of study+ 10 years' experience in Lab/Workshop.
- iii) **Technical Assistant**
B.Sc.
OR
Diploma in specified branch of study + 5 years' experience in Lab/Workshop.

3. Ability to work within prescribed tolerances
4. Knowledge of Hindi and Blue Printing reading.
- v) **Mechanic Grade 'B'**
1. High School+ITI Trade Certificate+5 years' relevant experience.
2. Ability to manufacture, construct and erect from working drawings and ability to make simple dimensioned sketches.
3. Ability to work within prescribed tolerances
4. Knowledge of Hindi and Blue Printing reading.
- vi) **Senior Laboratory Assistant**
High School (Sc.)+ ITI Certificate + 5 years' relevant experience.
OR

Section II-Desirable

a) **X-Ray Lab :**

Foreman Selection Grade (Technical Officer)

Experience in operation, repair and maintenance of X-Ray Units and other relevant equipment.

b) **Central Instrumentation Service**

Foreman Selection Grade (Technical Officer)

Experience in Electrical and Electronic circuit design, repair and maintenance of electrical and electronic equipment,

Technical Assistant :

Experience in electrical, electronics and audio equipment repair, maintenance and calibration.

Mechanic Grade 'B'

Trade certificate or equivalent (in electronics/electrical/machining), with experience in repair and maintenance of equipments/machining.

c) **Electrical Engineering Department**

Senior Technical Assistant/Technical Assistant

Experience in one of the following areas :

- Electronic circuits design/fabrication and testing using solid state devices and integrated circuits.
- Semi-conductor devices and fabrication.
- Microwave techniques and measurements.
- Electrical machines.
- Power electronics and control systems.
- Procurement/Inventory control of large varieties of electronics and electronic components/equipment.

Mechanic Grade 'A' & 'B'

Experience in one of the areas mentioned above or experience in electro-forming, electro-plating/printed circuits and through hole plating or experience in precision machining.

d) Metallurgical Engineering Department

Senior Technical Assistant/Technical Assistant

Experience in laboratory work and in handling and maintenance of Lab. equipment.

Mechanic Grade 'A' & 'B'

Experience in Science Lab. or specialised welding like argon welding etc. or foundry practice, forging smithy.

Senior Laboratory Assistant

Experience in Science/Metallurgical/Ceramic Lab. or experience in Ceramic making.

e) Chemical Engineering Department

Senior Technical Assistant

Experience in Instrumentation and repair and maintenance of equipment.

Senior Laboratory Assistant

Experience in running and maintenance of laboratories associated with Chemical, Thermal and other processes related to Chemical Engineering.

Mechanic Grade 'B'

Experience in working with all common machines tools along with their repair and maintenance.

Mechanic Grade 'B' (TA 102: Engineering Design Laboratory):—

for post i) experience in Lathe and fitting jobs along with turner and fitter trade certificate.

for Post ii) experience in carpentry work along with a trade certificate.

f) Physics Department

Senior Technical Assistant

Experience in laboratories of advanced research and teaching.

Senior Laboratory Assistant

Experience regarding operation and a maintenance of equipment in instructional and research laboratories.

g) Humanities & Social Sciences Department

Senior Technical Assistant

Experience of installation, operation and maintenance of equipment associated with language laboratory and/or psychology laboratory.

h) Central Glass Blowing

Senior Technical Assistant

Experience in glass blowing, repair and maintenance of associated equipment and machines.

Mechanic Grade 'B'

Experience in glass blowing, repair and maintenance of associated equipment.

i) Television Centre

Senior Technical Assistant

Experience in maintenance of audiovisual equipment, TV Studio equipment.

Mechanic Grade 'B'

Experience in maintenance and repair of electronic equipment.

j) Computer Science

Technical Assistant

Experience of handling and maintenance of analog computers and other electronic computing equipment.

k) Industrial and Management Engineering

Technical Assistant/Senior Laboratory Assistant

Experience and knowledge in work study/knowledge and skill in fabrication/experience in handling electronic equipment

l) Swimming Pool

Technical Assistant

Experience and skill in operation/maintenance/repair of filtration plant and equipment associated with Swimming Pool.

m) Graphic Arts Section

Mechanic Grade 'B'

Experience in Lino Operation and Hand composing along with capabilities of maintenance and small repairs of Lino-machine, or experience in Plate-making, off-set printing, letter press printing or skill in binding and experience in operation and maintenance of associated machines.

Draftsman Grade I

Experience in all types designing and drafting work. Preparation of design layouts, experience in ammonia and diazo printing. Knowledge of pantograph operation/experience and skill in art work, graphic designing and freehand drawing (Diploma in fine/commercial art will be preferred).

Draftsman Grade II

Experience and skill in designing, draftings, engineering drawings, ammonia and diazo printing.

n) Mechanical Engineering Department

Draftsman Grade II

Good understanding of drawing and detailing problems of mechanical engineering.

N.B. :—

- 1) Three posts of Foreman Selection Grade (Technical Officer)/Senior Technical Assistant and Twelve posts of Technical Assistant/Mechanics/Sr. Lab. Assistant/Draftsmen are reserved for candidates belonging to Scheduled Castes/Scheduled Tribes.
- 2) Qualifications may be relaxed by the Selection Committee in case of very good experience and record.
- 3) Experience may be relaxed by the Selection Committee in case of candidates possessing higher qualifications and excellent records.
- 4) Selection Committee can recommend appointments to lower position if necessary.

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**Jamalur Rahman
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Editor : ANJNI KUMAR

Youth Activity in the Universities

Amrik Singh*

Youth activity in the universities has suffered from two major weaknesses. One, it was not given the importance that was due to it and, two, an integrated view of the problem has not been taken at any stage so far.

Historically, NCC came first of all. After the fighting with China in 1962 when it was made compulsory, it received a good deal of attention as well as resources. It was soon found however that the country just did not have enough resources to make it compulsory for everybody. After about five years therefore compulsion was removed. Simultaneously the National Service Scheme (NSS) was launched. Another scheme, the National Sports Organisation (NSO) too was launched about this time but its coverage is not all that wide. As a matter of fact for quite sometime it was said that one of these three streams would be compulsory. In actual effect this could not be done and a student is now free to opt for anyone of them or ignore each one of them completely.

Most of these details are well known. However they are recapitulated here to underline the point made earlier that an integrated view of the problem has not yet been taken. While sports activities on the whole continue to languish, the NSS has received a certain degree of impetus in recent years. The NCC had its activity surveyed by a Committee and has by now implemented some of the recommendations made. Clearly, this seems to be the right time to take an overall view of the situation and establish priorities and programmes which would prevail, say, for the next five years.

As I see it, the bulk of students should be involved in sports. Both NCC and NSS should be meant, relatively speaking, for a certain small percentage of students. This is because NCC as well as NSS require a certain kind of personality make-up. Everyone cannot fit into these programmes nor indeed can everyone make anything like a contribution. But sports is a different thing. Everyone at that age can and should play. It is important therefore to ask the question if we are doing enough for sports and what steps are required to be taken to enable the bulk of students to participate in sports. Without going into further details, the following points might be made :

- (a) Not enough importance is given to sports whether in terms of men, resources or organisation. On the whole the activity is regarded as marginal. This situation can be remedied by taking corrective steps in regard to all these matters.
- (b) While infusion of more funds, especially in order to create facilities, would be helpful, the bigger

* Secretary, A.I.U.

weakness is lack of men of ability and talent to look after sports. Speaking generally, there is such poverty of talent at that level that unless some of the more gifted people can be persuaded to take interest in sports, sports would continue to languish for lack of organisation.

It should not be necessary to elaborate these points. The only thing that requires to be underlined is that to keep students idle and not give them enough to do, whether in the intellectual sphere or in terms of physical activity, is neither conducive to good education nor to orderly social behaviour. Whether we acknowledge it or not, this has been happening to some extent and with results that have distressed so many of us.

Over the years, the NCC has grown into a fairly large and well organised activity. During the period when it was made compulsory, it got over extended and the efficiency of operations went down drastically. Consequently compulsion had to be given up. Since then the NCC has improved in organisation as well as professional skills. The further re-organisation carried out since the Mahajani Report has helped to improve matters even more. Altogether it is doing admirable work and it is a matter of gratification that more than half a million students are involved in its various and many-sided activities. Having said this however it is important to raise three questions in regard to its objectives as well as its working.

One is with regard to the objectives of the NCC. Originally the main focus was on military training or, as they said, creating a second line of defence. The Mahajani Committee however recommended that the aims be re-defined and these include now "development of leadership, character, comradeship, spirit of sportsmanship and the ideal of service". The other aim which is to create trained manpower to be utilised in case of emergency of course stays there. Clearly, the NCC, as it functions today, is both an agency for training military manpower for the country and a youth programme with accent on qualities of leadership, character building and ideal of service.

To a great extent these very qualities also form the focus of emphasis in the National Service Scheme. As a matter of fact social service which used to be a part of the NCC during the period 1963-68 has been re-introduced. At present out of 120 periods of annual training 10 periods are set apart for this purpose. In other words, both the NCC and the NSS seek to cover more or less the same ground. What happens in consequence cannot be described accurately because the situation varies from place to place and institution to institution. In certain institutions the NSS is doing very good work. In certain other places there is a certain laxity of functioning. As far as the NCC is concerned, its functioning is more or less uniform all over the

country. That is because the NCC functions according to a certain set discipline and the level of functioning is more or less uniform therefor.

In a sense thus both NCC and NSS are parallel sectors of youth activities. In one case the focus is on social service; in the other case the focus is on military training with some social service thrown in. It needs no argument to show that there are problems of overlap which have to be taken care of. This is recognised and as far as one knows steps are being taken to effect coordination between these two youth programmes. How precisely this is effected however remains to be seen.

The second issue is in regard to resources. The NSS does not have resources, financial or organisational, in the same measure as the NCC has. In terms of finance, the NCC budget is something like Rs. 70 crores per year whereas the NSS budget is something like Rs. 3 crores per year. The enrolment in the NSS is approximately half of what it is in the NCC, though perhaps this strength can be expanded. In regard to organisation the NSS does not have much of a ground organisation. At the local level the situation is highly uneven. In certain places lot of initiative is shown and excellent work gets done. In certain other places there is a good spurt of activity but there is not much follow up. Student population is notoriously unstable. Students come and go every year, the only stable element being the teachers. Wherever teachers provide continuity, a kind of tradition gets built up. Wherever this factor is either absent or comparatively weak NSS does not succeed in maturing into a movement. At the state level, there is hardly any coordinating agency in respect of the NSS. This structural weakness contributes to the state of unevenness referred to above. Stronger and more effective leadership would without question help to improve the functioning of the NSS.

The third issue relates to the programme of work undertaken by these two agencies. In the case of the NCC the programme is clearly laid down. In the case of the NSS things have to be improvised. Wherever people are gifted with imagination and initiative, the programmes mounted are excellent but wherever there is laxity of functioning or lack of good leadership, the atmosphere is far from inspiring. To be more specific, leadership is usually provided by teachers. To the extent therefore that the right kind of teacher leadership is forthcoming, the NSS is able to give a very good account of itself. One of the things the NSS has to do therefore is to spend some effort on building up a pool of talent on which to draw upon. While something has been done in this connection, there is a good deal more that yet requires to be done.

Since both the NCC and the NSS to some extent seek to emphasise the same qualities of character there
(Contd. on page 166)

Replacing Marks by Grades

The system of marks and award of results in First, Second and Third Divisions or Fail and Pass, has stayed with us for so long that not only the common man but even some educationists and teachers think of the goals of education in terms of the pupil's successes (or failures) in the examinations conducted by the Boards and Universities. This is a myth with which we have suffered for ages. Now that the whole system of education is being revamped and even the educational objectives are being reformulated to suit our present day needs, it is absolutely essential that the examination techniques are also modernised.

There are indeed certain things which are capable of accurate measurements such as the height of a boy or the weight of a parcel of books. We can measure the length of a piece of cloth in exact metres and centimetres and can also measure the temperature of our body at a given time with precision. Can we really achieve the same kind of precision in educational measurement? We give the marks on a numerical scale but is the mark-scale similar to the scale of length, temperature or weight?

Through the system of marks, we say that a student has scored 100% marks in a subject (e. g. Mathematics) and another only 'Zero' in it. Does it mean that the former knows everything about the subject and the latter does not know anything of it? If two students secure equal number of marks it does not imply that they are equal in abilities. Similarly we cannot conclude that a student who has secured 75.3% marks is definitely better than a student who has secured 75.2% marks as the error of measurement may be more than the difference between the two marks. The research in examinations has shown that the mark awarded by an examiner is not the true mark as it is very likely that if he were to reassess the same script after some time he will himself assign a different mark to it. This is because there is an unavoidable subjectivity in marking and the marks awarded to an answer-script may differ from examiner to examiner at the same time and also for the same examiner over a length of time. Even in a subject like Mathematics which is considered to be a subject capable of exact scoring the studies have shown that a difference in marking should not be completely ruled out.

According to Taylor "an examination mark has neither the sanctity nor the precision which is usually attached to it." He got scripts of 45 students in English, Economics, History, Logic and Mathematics independently marked by two examiners. The highest

difference between means was found in Logic where the mean mark of one examiner was 55.8 and of another was 46.0. The lowest difference between means was found in History where the mean mark varied from 40.4 to 39.5. The highest difference in Standard Deviation was in Logic where Standard Deviations varied from 18.0 to 10.8 (Research on Examinations in India NCERT 1976)

Harper got some scripts of Hindi, History Geography and Biology of Class X final examination of a Board remarked— some by the same examiner and some by another examiner. The same examiner remarking his own scripts differed from himself by 42% marks. The highest mean difference was found in Biology. In the circumstances, "the best that can be said is that the mark resulting from an assessment is a first approximation. We should not attach too much importance to any single result nor to small differences in marks, or places, though the results of several assessments may indicate a general trend in a child's progress." (Assessment and Testing in the Secondary School, Schools Council Examinations Bulletin 32, U. K.)

Inconsistency in marking is often caused by the varying marking severity. Some examiners are lenient by nature, some are strict; there are some who are liberal in beginning and strict at the end or vice-versa. In such cases, marks assigned become the function of the personality of the examiner rather than of the performance of the student.

It has been observed that some subjects are highly scoring while others are not so. For instance Mathematics and Sanskrit are among those disciplines where it is possible to get as high as 100 marks out of 100, whereas in disciplines like English, Hindi and History the tendency on the part of examiners is not to use the full scale of marking (i. e. 0 to 100) but to stop at 75 or 80 marks at the most and even the best answer will not be awarded more than that. This suggests that 75 marks in English or History do not really mean the same thing as 75 marks in Mathematics or Sanskrit. In English they may mean that the student is outstanding but in Mathematics they may only indicate that the student is every good but not outstanding.

It has also been observed that the number of students getting Distinctions (75% and above marks) in highly scoring subjects is quite large as compared to the number getting Distinctions in less scoring subjects like English, Hindi or History. In one of the examinations of the Central Board of Secondary Education, while there were only 18 candidates who got distinction marks in Hindi out of about 8,000 candidates, there were over 600 candidates who got distinction marks in Mathematics out of about 4,500 candidates. Further, the range of minimum and maximum marks awarded also differed widely in the two subjects as the number of students who got below 15% marks in Hindi was much less as compared to that in Mathematics. The Standard

Deviation of Hindi was about 16 whereas that of Mathematics was about 30. This meant that the subject of Mathematics got double the importance than Hindi in the total scheme of examination although the marks of the two were added and the results worked out as if they were subjects having equal weightage. This practice is common with all the Boards and Universities which add the raw marks of subjects like Hindi and Mathematics together under the present examination system, without standardising or scaling them.

The arbitrary out scores of 60% marks for First Division, 45% for Second Division and 33% for Third Division for each subject uniformly, irrespective of nature of distribution of scores, make the things still worse. 'The Plan of Action on Examination Reform' prepared by the Ministry of Education and Social Welfare (1972) states that this arbitrary minimum required for passing, for getting a second class, or for getting a first class is "meaningless." "It is also scientifically unsound. It was once adopted when our scientific knowledge about examinations was inadequate. Even with improved information becoming available about the reliability of such marks, we still continue giving marks on the 101 point scale and furnishing these marks to the student. The unscientific nature of this work and the harm it does to the student is obvious," it states.

The scientific way of declaring results of an examination is, therefore, that of classifying candidates through a system of Grades. Most countries are already following this system. Some Universities of India have also now decided to adopt it. The University of Delhi has introduced this year the system of grades in its five Postgraduate Departments in the first instance, viz., English, Chemistry, Psychology, Law and Nursing. The University Grants Commission, while endorsing the Plan of Action referred to above has observed that "it is considered that implementation of examination reform, along the lines suggested in it, is in the interest of maintenance of standards of teaching and examination."

The Education Commission (1966) recommended that as in our present system of examination, the meaning of a mark varies from subject to subject and from year to year in the same subject, the system of grading must be such as would bring out whether a student belongs, say, to the top 20 per cent of his class or to the bottom 20 per cent. The certificate should state the relative grading of the student and if a five point scale is adopted, Grade 'A' may mean that the student is in the top 20% or so of those who have been successful at the examination.

In Soviet Union, the system of marking the student's performance is quite simple. It is a five-mark system, the mark "one" being the highest. The lowest mark is, however, used very seldom. The "3" roughly corresponding to the "fair" is the pass mark.

The scales generally used for Grading in different countries are 5 point scale, 7 point scale or 9 point scale. The most common form of distribution of grades is the percentile method by which certain percentages of students are placed in different grades.

The U. G. C. and the Central Board of Secondary Education have adopted the seven point scale of grading in their new scheme of evaluation. The Central Board's notations of the letter grades are as follows :

Grade A	Excellent
Grade B	Very Good
Grade C	Good
Grade D	Average
Grade E	Fair
Grade F	Marginal
Grade G	Poor

In the above table, Grade A is the top grade and Grade G is the bottom grade. Grade D represents mean grade.

If the test scores are normally distributed, the mean, median and mode all fall at the same point and bisect the distribution into two equal parts. Such a distribution will give a normal curve (bell-shaped) and it is based on the assumption that in a total population, many abilities and skills tend to be distributed as per normal curve. When scores are not normally distributed, they form a skewed curve which is either positive or negative. That would mean that some of the scores pile up at one end, and that the distribution of scores is not even.

In a normal distribution, the percentile of students to be placed in different grades on a seven-point scale will be as under :

Grade	Percentile Distribution	Classification
A	3	Excellent
B	7	Very Good
C	22	Good
D	36	Average
E	22	Fair
F	7	Marginal
G	3	Poor

The above procedure of Grading may be applicable where the number of students is very large but it will not be suitable where the number of students to be graded is small. Stanley and Hopkins in 'Educational and Psychological Measurement and Evaluation' state: 'A professor of Latin announced in the class of seven that he would grade the students on the 'normal Curve' i. e. one of the seven students would fail.' At the end of the class, one of the students muttered to the other six, "I am sure to be the one who fails, so I am dropping the course right

now." The others said, "But you can't do that because we do not know which one of us would fail then". So the six pooled their money and paid the predestined failure to stay in the course and absorb the failing grade.

According to another amusing story the wives of the students enrolled for the more difficult courses in sufficient number to absorb all the failing grades themselves. They simply did little or no work and received 'F's and 'G's while their husbands got 'D' or better grades without much effort.

The All-India Seminar on Grading held by NCERT in 1976 recommended that grades may be determined on the basis of the distribution of students' scores over the last 3 to 5 years. Different norms for different subjects may be used for allocating grades. Dandekar and Walker Hill have also recommended the same procedure. The Central Board of Secondary Education has, as recommended by the NCERT Seminar, decided to determine the grades on the basis of the mark distribution of each subject during the last 3 years. Through 'grading on the curve' percentile of candidates to be placed in each grade for different subjects will be arrived at. Suitable adjustments will be made to ensure that the imbalances that have hitherto been noticed in respect of certain subjects such as History, English, Hindi etc. on the one hand and subjects like Mathematics, Physics or Sanskrit on the other, are removed in grading in a phased manner. The position will be reviewed periodically by the Board. Before taking the above decision, the Board considered different methods of grading. It was not in favour of, for instance, a mechanical conversion of marks into grades by prescribing a set table of conversion whereby those getting, say, 80 to 100% marks may get grade A, those getting between 65 and 80% may get grade B, and so on, because such a method does not take into account the inter-examiner and inter-subject variability etc.

The Central Board has also decided not to classify the candidates of its new Secondary School Examination into fail and pass. The concept of 'fail' or 'pass' has been abandoned. There will thus be no overall grading. The certificate will indicate the achievement of the pupils in terms of grades in each subject. Any one desirous of improving the grade in any subject or subjects will be permitted to do so at the next examination. This will reduce unnecessary wastage and stagnation and will also relieve frustration of the examinees as they will not be required to reappear in those subjects in which their performance has been satisfactory. Hitherto, a student was branded a total failure even if his performance in some of the subjects was satisfactory because he might have not done well in some others.

The Grading system thus helps to minimise wastage and stagnation. It reduces the unnecessary domination of the examinations over the education-

nal system. It removes the undue importance which the marks tend to assume under the existing procedures and also corrects the imbalances of evaluation that exist between different subjects in the same year and between one year to another in the same subject. It makes the examination system more scientific and valid. It also enables the examining bodies to standardise the raw scores and thus present a truer picture of the students' achievements in different subjects.

The unhealthy competition that has existed between schools and schools and students and students in the name of 'merit' and the corrupt practices that have been adopted in the past by many students to secure higher marks, as each mark counted towards raising the aggregate marks and thus helped to improve their division, need to be stopped sooner than later. It is time that all the Boards and Universities discontinue declaring their results in marks and adopt the system of Grades instead. The resolution of the Conference of Boards of Secondary Education of India held recently in Trivandrum agreeing in principle with the Grading system and the steps that the NCERT, UGC and the Central Board of Secondary Education have taken to implement the new system will, it is hoped, go a long way in modernising the evaluation techniques and saying good-bye to the traditional outmoded system of marks.

—R.P. Singhal,
Secretary,

Central Board of Secondary Education,
New Delhi.

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Genetics and wheat improvement seminar held at Ludhiana

Dr. M. S. Swaminathan, Director-General of the Indian Council of Agricultural Research inaugurated the national seminar on genetics and wheat improvement organised by the Punjab Agricultural University with the assistance of the ICAR. He said that wheat scientists and workers in the country have still a vast untapped yield reservoir. While the advances in wheat production and productivity have been impressive over the years, the task ahead was indicated by the National Commission on Agriculture which estimated that the demand for wheat could reach about 46 million tonnes by the turn of the century. Wheat has now become a buffer crop and has to play a role of

diseases and pests was the foremost among all tasks. Equally important was increasing the yield potential of un-irrigated wheat because of the large area covered by it. The other items demanding attention were improving the efficiency of input use particularly fertilizer and water so as to get higher yields under low and moderate input supply, enhancing the yield potential and improving the nutritive quality.

Dr. A. S. Cheema, Vice-Chancellor of Punjab Agricultural University in his presidential remarks said that there was a need to reduce the gap between a new finding by scientists and its adoption by all the farmers. The PAU has taken comprehensive measures and was going to develop research and extension centres in all the districts.

cally on subjects of topical interest, concerning the growth of Tamil thought and culture. The State Government has promised to help the Academy with adequate financial grants.

At the time of inauguration of the Academy Prof. S.V. Chittibabu Vice-Chancellor of the University conferred the fellowship on Dr. T.P. Meenakshisundaranar, the first Vice-Chancellor of the university and a doyen among Tamil scholars and Thiru P.N. Appuswami, a man of letters and a pioneer in interpreting science and technology through Tamil.

Accepting the honour Dr. Meenakshisundaranar in his reply said that he began his service to Tamil language under the command of Mahatma Gandhi and his love for Tamil had never bred any hatred towards other languages. Thiru Appuswami in his reply said that the honour conferred on him cast on him a duty and a responsibility which demanded a measure of service from him and he would try to render it to the best of his ability.

CAMPUS NEWS

gap-filler for deficiencies in millet and rice production. Therefore the actual production of wheat is less prone to violent undulations in yield and had to be higher particularly in seasons when either due to drought or floods or other aberrations in weather, crops were affected.

Dwarf wheat apart from the primary advantage of high yield had several other advantages. Because of their non-lodging habit they can be sown as companion crops just as sugarcane and wheat are becoming good companion crops. Secondly, the relative insensitivity to photo period makes late sowing possible. This has made it possible to grow wheat in non-traditional areas and in non-traditional seasons.

Identifying the tasks before the wheat breeders and the genetic researchers, Dr. Swaminathan mentioned that reducing the genetic vulnerability of wheat to

The conference was attended by over seventy delegates from different states and central institutes from all over the country.

Madurai University Tamil Academy inaugurated

Madurai University held its decennium celebrations in February 1977. Madurai has been the centre of Tamil culture and civilisation for the last two thousand years. With a view to recapturing the spirit of the hoary literary tradition of the three Tamil Sangams of ancient Tamil Nadu and blending it with the scientific temper of modern times, Madurai University founded the Madurai University Tamil Academy recently. One of the objectives of the Academy is to honour distinguished scholars in Tamil for their contribution to Tamil Literature or to science education through Tamil by conferring on them a fellowship. It is also proposed to hold seminars periodi-

Women Education Commission

While presiding at the inaugural meeting of the Commission on Higher Education for Women, Dr. Malcolm S. Adiseshiah, Vice-Chancellor, Madras University, posed a question whether some subjects like Music, Nursing and Home Science should continue to be women dominated and other subjects such as engineering and technology monopolised by men. He wondered whether there was any justification now for having separate colleges for men and women. Women education was at the crossroads where rationality and old social traditions met. There was no agreement on the objectives of higher education. He said that the area of women education as a jungle of ignorance, emotion and conflicting objectives. One view was that as in the case of men, employability should be the aim. But the conservative approach

was that women education should seek to develop good housewives.

The Vice-Chancellor said that the nature of women education should be non-sexist in character and the higher education for women should be no different from that for men. He said that the learning process was the same for both men and women though infrastructure for learning could be different. The curriculum, teaching methods and institutions had to be examined from the point of view of the needs of women, personality development and objectives such as employment and home management.

Dr. Rajammal P. Devadas, Chairman of the Commission, said that the Madras University is the first in the country to set up such a body to examine the needs of women education. The Commission has taken up this task at an appropriate time as the university courses are being restructured and many reforms are contemplated by the university.

UGC directive for educational improvement

Prof. Satish Chandra, Chairman of the University Grants Commission, has urged the universities to select two lead colleges in each district in its efforts to raise the standards at the undergraduate level. He said that the ultimate idea was to make these lead colleges autonomous. The Commission was anxious that these colleges should start functioning from the coming academic year. The Commission would also help in the diversification and introduction of innovative type of programmes, field studies, rural investigation and strengthening of research development of these colleges. The Commission at the same time did not want these colleges to function as elite institutions. There should be reservations for students from the scheduled castes and scheduled tribes and other weaker sections of the society.

Prof. Satish Chandra said that endeavour of the Commission was now to improve the standards at the undergraduate level. It was equally concerned at the unplanned proliferation of the colleges. The Commission has introduced many schemes to improve the standards of colleges for which the State Governments assistance was also very necessary. The matching grants from the Commission would not be made available if the colleges were started without the prior consulta-

tion of the Commission. Though this would not have immediate effect, it would deprive the college of having twice its share of amount from the Commission in the long run. Prof. Chandra advised the universities to conduct district-wise surveys in connection with the implementation of development schemes of the Commission. A special committee of the Commission has been appointed to examine the question of integrating national service scheme with the curriculum of higher education. □

Gujarat University Decides to Pay Examiners

In consequence of the recommendations of the Sen Committee and the introduction of the revised scales of pay a couple of years ago, one important development that took place was that remuneration to examiners was discontinued. Most teachers and quite some administrators had serious misgivings in regard to the feasibility of this proposal. However since everybody was anxious to have the new scales of pay implemented this particular proposal was also accepted.

In the first year of its implementation, most universities paid the remuneration on the ground that the commitments to this end had been already made. Last year there were difficulties in a number of places but because of the general situation in the country, most universities somehow managed to conduct the examinations on time and on the whole successfully. This year however the strains began to manifest themselves even before the current change in the political situation.

In certain universities, question papers were not received in time. In certain other universities, indeed States, though scales of pay had been enforced, there were all kinds of residual problems which created difficulties. For instance, in Gujarat the colleges claimed much more by way of grant-in-aid than the State Government was prepared to offer. Not only that, some of the teachers were found surplus because of the switchover to the new pattern of education. Owing to the changing situation, notices were not served on the surplus teachers; at the same time there was uncertainty in regard to their future. With only two weeks to go for the examinations, the Gujarat University found itself in a situation where not all the question papers had been received.

In view of the developing difficulties and the desire to adhere to the schedule of examinations already laid down, in a major reversal of policy, the Gujarat University has decided to pay remuneration to the examiners on the same terms and conditions as obtained before.

Indian Role in UNCTST

Dr. A. Ramachandran, Secretary to the Department of Science and Technology, who was elected as the Chairman of the 52-member preparatory committee for the United Nations Conference on the Science and Technology, said that India will play a major role in the formation of the world's first ever science and technology plan for development. Elaborate preparations would be made by all the member countries of the United Nations to prepare national and regional documents on application of science and technology for presentation at the 1979 conference. The venue of the conference has however still to be decided. The choice is likely to be either in Mexico, Philippines, Austria or the United States. The conference would try to effect coordination in science and technology policies of various countries so as to meet the needs of developing countries and strengthen their national capabilities in science and technology. Papers on application of science and technology for development would be invited by May 1978 and these would be considered at regional meetings to be convened by the Regional Economic Commissions and prepare regional reports on science and technology. During the course of the year the regional committees for the 1979 conference would meet and assess the progress on the basis of suggestions from countries of the region and make recommendations on five subjects for the consideration at the preparatory committee in September 1978. The various specialised agencies of the United Nations would also prepare overview papers on how science and technology have been implemented by these agencies. Inter-regional meetings of developing countries would also be held to locate overlapping areas. The papers on choice and transfer of technology development, elimination of obstacles in the way of better

utilisation of knowledge and capabilities in science and technology, particularly for the benefit of the developing countries

and on methods of integrating science and technology with economic and social development would be encouraged.

INDIAN SCHOOL OF MINES DHANBAD-826004.

No. 615002/77

Dated February 22, 1977

Revised Notice for Entrance Examination-1977

In supersession of the previous notice, the Indian School of Mines a 'deemed' University, invites applications for the Entrance Examination for admission to its 5-year programme of studies leading to the award of (a) B. Tech. degrees in Mining Engineering and Petroleum Engineering, and M.Sc. degree in Applied Geology. A B.Sc. degree in Applied Geology is awarded after successful completion of three years of the 5-year programme.

The Entrance Examination will be held on Friday, the 27th and Saturday, the 28th of May, 1977. The new session is likely to commence in the last week of July 1977.

The likely centres for the Entrance Examination are : Ahmedabad, Asansol, Bangalore, Bhopal, Bombay, Baroda, Calcutta, Chandigarh, Coimbatore, Cuttack, Delhi, Dhanbad, Digboi, Gauhati, Gudur, Hyderabad, Jaipur, Jodhpur, Keonjhar, Lucknow, Madras, Muzaffarpur, Nagpur, Patna, Ranchi, Sahdol, Simla, Srinagar, Trivandrum, Waltair.

Prescribed Qualifications : A pass in the Higher Secondary (in Science stream with Chemistry, Mathematics and Physics, or in the Technical Stream) OR Pre-University or equivalent examination (with Physics, Chemistry, Mathematics and English) OR Indian School Certificate Examination (with Mathematics, Physics and Chemistry), OR 1st year examination of the 2-year Intermediate (with Physics, Chemistry, Mathematics and English) or passing out of the plus 2 stage in the new 10+2 pattern of School education. Those who have appeared in the above examinations are also eligible to apply but should submit necessary evidence of having passed the qualifying examination by June 28, 1977.

Age Limit : 20 years for B. Tech. in Petroleum Engineering and 21 years for other programmes as on October 1, 1977. The age limit is relaxable by one year for those who have passed out of the plus 2 stage in the new 10+2 pattern of School education and by further three years for Scheduled Caste/Scheduled Tribe candidates.

Prescribed application forms and Memorandum of Information may be available from 2nd week of March, 1977 upto April 10, 1977 on payment of Rs. 5/- by Money Order to the Registrar, Indian School of Mines, Dhanbad-826004.

Applications in the prescribed form complete in all respects should reach the undersigned latest by April 15, 1977.

Notes: Our earlier advertisement No. 615002/76 dated 20th December, 1976 is hereby cancelled.

-Those who have passed from the new 10+2 pattern of education and qualify in the above Entrance Examination, will be permitted to appear in second examination which will be held at the School sometime in the first week of August 1977. Those who qualify in this examination would be permitted to join the 2nd year of the 5-year course.

-Those who have already applied in response to our earlier advertisement need not apply again.

**M. S. Ramamurthy
REGISTRAR**

Non-formal education in universities

The Indian Universities Association for Continuing Education met in Coimbatore under the presidentship of Dr. Malcolm S. Adiseshiah, Vice-Chancellor of the University of Madras. It recommended to universities to include non-formal education as part of the university activities besides teaching and research. The decision was an important step towards the universities participation and involvement in rural development work as suggested by the Prime Minister Smt. Indira Gandhi. The idea was to make non-formal education part of curriculum of the post-graduate and undergraduate courses and provide the students facilities to do national service. This would be brought about with the personal commitment among the staff and students and through offer of incentives.

Dr. Adiseshiah said that by way of implementing the non-formal education programme it has been suggested that a system of part-time courses could be introduced in both liberal arts and professional courses to enable the undergraduates to qualify for postgraduate degrees.

The conference suggested setting up of legal aid clinics with the help of students and members of the faculty of law as part of national service scheme to render free legal aid to the poor in both urban and rural areas. Similarly making it compulsory for medical students to serve in primary health centres as part of their interneer programme and introduction of a system which would combine both formal and non-formal education to prevent discrimination were among the other suggestions on which there was a general agreement.

The conference this year was attended by sixty members including twentyfive Vice-Chancellors. The general consensus was that non-formal education activities

which ranged from village work by staff and students of universities to adult education and adult literacy campaign, should become part of the regular curriculum both at the undergraduate and postgraduate levels.

New Islamic centre

Calcutta would be the third university to set up Islamic Studies Centre. Aligarh and Osmania have already established such centres. The University Grants Commission and the West Bengal Govt. have been requested to provide the financial assistance.

The main objective of the institute will be to collect and analyse old letters, documents, diaries and manuscripts in Persian, Arabic, Urdu and Bengali lying scattered in different parts of the State. It is estimated that a sum of about Rupees one lakh would be required initially for the purchase of a mobile van, camera equipment and zerox machines and the storage of collected manuscripts. To begin with ten research scholars and four permanent fellows, would be required for this purpose.

NSS in varsity curriculum

The University Grants Commission has entrusted the problem of integrating national service scheme with the curriculum of higher education to a special committee. Prof. B. Ramachandra Rao, Vice-Chairman of the University Grants Commission said that credits should be incorporated at the +3 stage for the NSS work. He was speaking at the four-day orientation programme for key personnel of NSS workers. He emphasised the need for involving more and more science students and technocrats in the programme which had already become a movement now. Increased involvement of science, engineering and medical students, he thought, could bring about a quicker development in the rural areas.

Students at Calcutta syllabus workshop

The first workshop on the effective use of the undergraduate syllabi for pass and honours courses in Arts and Science faculties was held in Calcutta. The workshop examined the syllabi of various courses in science, humanities and of social science subjects. Dr. B. Ramachandra Rao, Vice-Chairman of the University Grants Commission inaugurated the workshop. Dr. S. N. Sen former Vice-Chancellor of Calcutta University was the Director of the workshop. Dr. S. K. Verma and Dr. M. L. Tickoo from the Central Institute of English and Foreign Languages, Hyderabad, were the resource persons. More than two hundred teachers and fifty students from the various affiliated colleges of Calcutta attended the workshop.

One of the novel features of the workshop was that the students who had passed the degree course examination in different subjects also participated in the discussions. They narrated their difficulties and appreciations of the courses. Prof. S.K. Mukherjee Vice-Chancellor of Calcutta University wanted the syllabi of these courses to be examined both by the teachers and the students to find out the constraints in their implementation in the undergraduate colleges. He said that his experience was that the students felt very sore when they were asked to appear in the practical examination without adequate preparation. He felt that such situations should be avoided. He asked the teacher organisations to help the university in improving the academic standards of the affiliated colleges.

Andhra's three new P.G. centres

The Syndicate of Andhra University has accepted the proposal to start post-graduate centres at Nuzvid with special emphasis on science; at Srikulam with emphasis on social

and applied sciences and at Kakinada with emphasis on languages and humanities from the academic year 1977-78. The university Grants Commission and the State Government have been approached for their approval and financial assistance. The University also accepted an endowment of Rupees five lakhs made by the Road Transport Corporation for starting a course in transport management studies. A chair in this subject will accordingly be created.

As a gesture to the weaker sections of society, the Syndicate of the University has decided not to collect tuition fees and exemption fees from Scheduled Castes and Scheduled Tribes students joining the correspondence course in the university from the next academic session.

Industrial relations diploma for Madras

The Syndicate of Madras University recently constituted a professional board of studies for developing curriculum of the post-graduate diploma course in industrial relations. The committee will meet under the chairmanship of Mr. G. Ramanujam, INTUC General Secretary. The other members are: Mr. S.C.C. Anthoni Pillai, Mr. N.V. Ramakrishnan, Dr. Ramani, Dr. K.N. George, Dr. R. Jayagopal, the Commissioner of Labour and Miss Devendra. The board will suggest curriculum for the course, lay the teaching schedules, prescribe the entrance qualification, advise on teaching faculty and prepare the scheme of examination and finalise and make precise budget for the course.

Regional library centres

Prof. Satish Chandra, Chairman of the University Grants Commission said in Cochin that the Commission would create a series of regional library centres so as to provide books and reference to the students, the people and the industry. In view of the rising cost of production of books

in the country, there was an urgent need for such centres. He felt that higher education must be enriched by utilising the services of experts and their good works in their respective fields. People with diverse backgrounds should make contribution to the development of higher education.

Gujarat encyclopaedia released

The Gujarat University has brought a five hundred page first volume on 'Ayurvigyan' dealing with ayurveda, allopathy, homoeopathy and other related sciences in record time. The compilation was released by the State Education Minister, Mr. Jaideepsinh Baria in Ahmedabad. Hari Om Ashram Prerit Bhailalbhai Amin Memorial had provided the necessary financial cover for this project.

Shri I. J. Patel, Vice-Chancellor of the university hoped that the encyclopaedia would prove to be of great help to the common man and the remaining nine volumes would be brought out quickly. The publication on science and technology will get priority. He thanked the Hari Om Ashram for this laudable step which inspired the university to take up this ambitious project.

MIM Course for Calcutta

Calcutta University would soon introduce a three year Master's course in Industrial Management under its Commerce Faculty. This will be the first of its kind to be started in any of West Bengal Universities. The course will be conducted on semester system and the examinations would be held at the end of six semesters. Honours graduate in social sciences, natural sciences, engineering and technology would be eligible for admission. The students on the completion of the course could fill the appointments of executives in big commercial firms and national undertakings. A serious endeavour would also be made to train

them in establishing themselves as industrial entrepreneurs. Initially thirty five students would be enrolled. The subjects will be varied according to the requirements of the respective streams of the students. The university also plans to start farm management course on similar pattern.

Borlaug award for Krishnamoorthy

Dr. C. Krishnamoorthy, Director, All-India Coordinated Research Project for Dryland Agriculture has won the Borlaug Award for 1976. Last year the award was given to Dr. A.B. Joshi who was the Director of the Indian Agricultural Research Institute and now the Vice-Chancellor of Mahatma Phule Kriśi Vidyapeeth. The award carries a cash prize of Rs. 10,000 and a gold medal which is awarded every year by the Coromandel Fertilisers Limited in the honour of Dr. Norman E. Borlaug the nobel prize winner for his contribution to agriculture and advancement of wheat.

Dr. Krishnamoorthy has done significant research work in the management of crops in dryland areas, both in the capacity of the Director of Research in the Andhra Pradesh Agricultural University and as Coordinator of the Dryland Project. His early work as a soil chemist in the Nizamsagar project led him to identify the deficiency of phosphorus as an important cause of failure of rice. He also diagnosed serious zinc deficiency in many districts of Andhra Pradesh. Having identified nutritional deficiencies, he helped improvement of the soils by corrective doses of phosphates thus enabling profitable cultivation of rice.

Asiatic Society honours Prof. Dirac

The Asiatic Society of Bengal honoured Prof. Paul Andre Maurice Dirac when he was awarded Rabindranath Tagore birthcentenary plaque for his contributions to physical science with special reference to the development of 'ferimi-Dirac statistics and relativistic wave equation.' The society also

awarded Durga Prasad Khaitan Memorial gold medal to Dr. B. D. Nag Chaudhuary, Vice-Chancellor, Jawaharlal Nehru University, New Delhi. The citation mentioned Dr. Nag Chaudhuary's original contribution in the field of nuclear science and to the industry as a member of the Planning Commission and Scientific adviser to the Ministry for Defence.

Dr. S.C. Dube, Director of the Indian Institute of Advanced Study, Simla, was honoured with S. C. Roy Memorial medal for his contribution to cultural anthropology in India. Dr. Kalpana Roy Chaudhury, the noted geologist was awarded Prof. N.N. Chatterji medal for her outstanding work in the field of geology, especially the mineral experimental investigation on the solid solution series. Dr. Deva Prasad Ghosh got the R. P. Chanda centenary medal for his contribution to the history of art of India and Southeast Asia. Mr. A.L. Dias West Bengal Governor, presided over the annual general meeting of the Society this year at Calcutta.

Sixteen scientists get Bhatnagar Award

The Council of Scientific and Industrial Research announced the S.S. Bhatnagar prizes for the years 1974 and 1975. The value of each award is Rs. 10,000.

The recipients of 1974 prize are: Prof. K. P. Sinha (IIS, Bangalore) Prof. M.S. Sodha (IIT, Delhi), Prof. U. R. Ghatak (Indian Association for Cultivation of Science, Calcutta), Dr. K. Nagarajan (Geigy Research Centre, Bombay), Dr. John Barnabas (Ahmednagar College), Prof. M. A. Pai (IIT, Kanpur), and Prof. R. Narasimha (IIS, Bangalore).

The recipients of 1975 are: Prof. B. R. Nag (Centre of Advanced Studies and Electronics, Calcutta University) Dr. K.L. Chopra (IIT, Delhi), Prof. A. Chakravorty (IIT, Kanpur), Dr. D. S. Bhakuni (Central Drug Research Institute, Lucknow), Dr. O. Siddiqui (TIFR, Bombay), Dr. (Mrs) A. Sharma (Calcutta University), Dr. U. R. Rao (ISRO, Bangalore), Prof. P.C.

Jain (IIS, Bangalore) and Dr. M. S. Narasimhan (TIFR, Bombay).

Gujarat organises boat sailing & sea voyage camps

The Youth Welfare Department of Gujarat University organised recently a boat sailing training & sea voyage camp in the open sea with the help of boats with sails in cooperation with the Tolani Shipping Company. The technical help of the Royal Yacht Club of Bombay was also available. The university has been organising various adventurous activities. Trekking up to the height of 20,000 ft. from Gangotri to Badrinath through the snow-clad glaciers, valleys and passes and trekking in Lahul spity valley, trekking-cum-expedition to Tantu Pass and Ladakhi peak and trekking in the desert of Kutch both for men and women, cycle trip all along the sea coast from Dwarka to Bhavnagar and trekking in jungles of Rajpipala have been the other adventurous activities organised by the university. These activities have brought out the best in the students and have helped them to learn much more than what they could do in the classroom. It has developed a feeling of cooperation with each other. They developed social contact and mixed with the people wherever they went and this further helped in inculcating the kind of national integration and instill in them virtues and much needed good traits of character.

In the boat sailing training campaign, ten students were selected after a stemina testing swimming contest of one and half hour. The expedition was organised by the Assistant Director of Youth Welfare of the University. He was assisted by another teacher. The students were divided in four groups and they were taken to 10-20 kilometres in the open sea at Bombay every day for about five to six hours. They were also encouraged to swim in the open sea for some

time. These students were trained not only in handling the sailing boats but were taught theory as well as practice of sailing which made them conversant with the various technical aspects of boat sailing. After the training they were taken to Goa and back to Bombay in a ship in order to familiarise them with the harbours manners and the conditions prevailing in mid-sea. The students enjoyed participating in this programme. They have developed a keen sense of discipline and interest in the sea life. Dr. Nandlal Tolani, Managing Director of the Shipping Corporation not only financed and helped the expedition but also looked after the welfare of the students in Bombay.

Workshop on English Language

The Department of English & Modern European Languages, Lucknow University organised a Workshop on English Language and Literature from February 2 to February 5, 1977. The Workshop was sponsored by University Grants Commission and was held in collaboration with Central Institute of English & Foreign Languages. Dr. D.D. Sharma, Head of the Department of English & Modern European Languages was the Director of the Workshop.

Senior teachers of English from 14 Universities including the Universities of Aligarh and Banaras participated in the Workshop, which was concerned with the systematization and formulation of courses of study in English at the undergraduate & postgraduate level. The major work in the Workshop was done in four different Committees and the recommendations were finally discussed at a meeting of all the delegates.

Autonomy for Madras colleges

The University of Madras will grant the status of autonomous colleges to its four premier colleges: Madras Christian College, Loyola College, PSG Arts College and the PSG College of Technology. The Economics and Chemistry Departments of the Vivekananda College will also have the autonomous status.

The Coimbatore and Tiruchirappalli centres of the university would soon have separate Syndicate and Boards of Studies. They would also have separate Directors and independent financial and administrative set up. Dr. Malcolm Adiseshiah feels that this arrangement would pave the way for the establishment of two universities at these centres at a later stage. The Vice-Chancellor said that the grant of autonomous status to the colleges would not be a new concept and such colleges existed elsewhere. Although they enjoyed autonomous status these colleges continued to be affiliated to the university. He removed the doubts of the faculty and assured them that the condition of services of teachers would be safeguarded in these colleges. The autonomous status has been granted to these colleges as they have fulfilled the requirements laid down for the purpose by the Syndicate and the University Grants Commission. According to the rules framed an autonomous college or department will have autonomy in the matter of framing of courses of studies, arranging for instructions to students, devising methods of evaluation, examination and tests pertaining to the award of degrees and diplomas for the university and admission of students. These colleges will also have the power to make rules and regulation, set up Board of Studies in the subject concerned and constitute an Academic Council. The Boards of Studies should have external experts including an expert from the university. The autonomous status

will be granted initially for a period of five years but the working shall be reviewed at the end of the third year. The Syndicate has the powers to extend the period of five years or to revoke the autonomy granted at any time after scrutiny and after due notice.

The Syndicate also authorised twentyeight colleges to introduce semester system from the next academic year.

Uniform engineering course

The All-India Council of Technical Education has recommended that there should be uniform pattern of 4-year first engineering degree course. The entry for such a course should be after 12 years of schooling. For the transitional period up to 1980-81 where both the 11th and 12th new higher secondary school will still be in operation, admissions will be made from both these courses. Those coming from the 10+2 system will however be exempted from the first year course on the basis of the test conducted by the institution concerned. The object in such cases will be to ensure the attainment of minimum standards envisaged by the National Council of Educational Research and Training at the +2 stage.

In the case of scheduled castes and scheduled tribes the Council has suggested the extension of the duration of scholarship by one to two semesters under the 4-year programme. At present the duration of the degree course in engineering is four years in some institutions with intermediate science as admission qualification and five years in others with higher secondary as the basic qualification for admission. The question of future changes in the pattern of technical education has been examined by a study group.

At the diploma level the Council wants the full-time course to be normally of three

years as in most of the polytechnics at present, with the ten year schooling of the new pattern as the minimum educational qualification. For specialisation, a one-year advanced post-diploma course has been recommended.

(Cont. from page 158)

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second-class (that is to say, with an aggregate of more than 54% marks) Master's Degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) supra.

Preferential: Experience of teaching degree/honours/post-graduate classes for two years.

General:

Benefits of Provident Fund available as admissible under the rules on confirmation. Period of probation for all posts is one year. It is not necessary to fill any/all of the advertised posts.

For the posts of Lecturers, other things being equal, preference will be given to Scheduled Castes/Tribes candidates, who are considered fit. Such candidates should indicate in their applications that they belong to Scheduled Castes/Tribes, attaching certificate from the District Magistrate of the District to which they belong. No other certificate for this purpose will be entertained. In case of Scheduled Caste/Scheduled Tribe candidates interviewed by the Selection Committee, if suitable candidates are not available for appointment to the posts of Lecturers, the Selection Committee may recommend appointment of suitable candidate as Research Associate in the scale of Rs. 700-1300 for a period upto three years and these persons could later compete for the posts of Lecturers as and when vacancies occur.

Applications on the prescribed form (available on request, accompanied with a self-addressed envelope of size 23 cm x 10 cm, free of cost, from the office of the Registrar) with recent testimonials, publications etc. should reach the Registrar, Lucknow University by Saturday, April 2, 1977. The candidates who are in service must send their applications through proper channel. Applications Forms to outstation candidates will be issued by post upto Saturday, March 26, 1977.

Sd/-
Kaushal Kishore
Deputy Registrar

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BANARAS HINDU UNIVERSITY (Advertisement No. 18/1976/77)

Applications are invited for the undermentioned posts. The benefit of Provident Fund/Pension, Dearness Allowance, House Rent Allowance and City Compensatory Allowance are admissible according to University Rules. The retirement age of University Employees is 60 years. The appointment will be made on two years probation on all permanent posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications for post Nos. 1 to 30 will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Orders for Rs. 7.50 in favour of the Registrar, Banaras Hindu University towards the application fee. Application forms alongwith the leaflet of information will be supplied free of cost by the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 on receipt of Rs. 0.40 paise stamped self-addressed envelope of 23 cm x 10 cm size. Candidates called for interview for these posts will be paid actual Railway fare by the Second class plus reservation charges for sleeper and/or actual Bus fare from the present residence bothways by the shortest route. No other expenses will be paid.

Application for post No. 31 should be made on plain paper stating clearly the Name, Age, Address, qualifications, experience etc. alongwith a Crossed Indian Postal Order/Bank Draft for Re. 1/- as application fee drawn in favour of the Registrar, BHU. Candidates called for interview will not be paid any travelling expenses for this post.

Application for each post be sent separately alongwith attested copies of certificates in support of the qualifications and experience mentioned in the application and be addressed to the Registrar (Selection Committee Section) Banaras Hindu University, Varanasi-221005.

Incomplete application in any respect will not be entertained for consideration.

Those who are in service should apply through proper channel. M.O. or cheque will not be accepted towards the application fee.

The last date for receipt of application is 31 March, 1977.

PROFESSORS—Grade: Rs. 1500-60-1800-100-2000-125/2-2500.

READER—Grade: Rs. 1200-50-1300-60-1900.

LECTURER—Grade: Rs. 700-40-1100-50-1600

FACULTIES OF SCIENCE & HUMANITIES

1. PROFESSOR OF GEOPHYSICS (One)
2. PROFESSOR OF PHYSICS (One)
3. PROFESSOR OF GEOGRAPHY (One).

Qualifications Essential: (1) A Doctor's Degree and/or published work of an equally high standard.

(2) Consistently good academic record with first or high second class (B+) Master's Degree in the subject or an equivalent degree of a foreign University. (3) Specialisation in Meteorology (for post No. 1 only). (4) About ten years experience of Post-Doctoral research and/or teaching at a University or College. (5) Ability to guide research of a high standard.

Desirable: (1) Specification in Human Geography of Settlements and Applied Geography (for post No. 3 only). (2) Research publications in standard journals (for post No. 2 only).

Note: Those who have applied earlier for post No. 1 in response to our Advt. No. 11/76-77 need not apply again.

4. PROFESSOR OF CHEMISTRY (One).

Qualifications Essential: (1) A Doctor's Degree and/or published work of an equally high standard in Analytical/Inorganic Chemistry. (2) Consistently good academic record with first or high second class (B+) Master's Degree in Chemistry with specialisation in Analytical/Inorganic Chemistry or an equivalent degree of a foreign University. (3) About ten years experience of Post-Doctoral research and/or of teaching at a University or College. (4) Ability to guide research of a high standard.

Desirable: (1) Capacity for independent research as evidenced by publications.

5. READER IN VYAKARAN (Two).

Qualifications Essential: (1) A first or second class Shastracharya or Acharya Degree or an equivalent qualification in the subject with an Acharya or Shastracharya Degree in Sahitaya or Nyaya. (2) A Doctorate Degree or published work of high merit. (3) About five years teaching experience of Acharya classes in a University or College.

Desirable: (1) Experience of guiding research. (2) Thorough knowledge of other fields in Vyakaran. (3) Publication of standard books of Vyakaran or Sahitya or Nyaya. (4) Ability of teaching through Sanskrit medium.

Note: Those who have applied in response to our earlier Advt. No. 14/1974-75 need not apply again.

6. READER (Two) (Temporary likely to continue during the Fifth Plan period under area study programme on Nepal—Dept. of Political Science).

Qualifications Essential: (1) Consistently good academic record with first or high second class (B+) Master's Degree in Political Science or an equivalent degree of a foreign University. (2) A Doctorate Degree with specialisation on Nepal or published work of an equally high standard on Nepal. (3) About five years experience of Post-Doctoral research and/or teaching in a University or College. (4) Experience of guiding research. (5) Knowledge of the Nepali language sufficient to comprehend and used documents in Nepali.

7. LECTURER (in Nepali language) (One). (Temporary likely to continue during Fifth Plan under area study programme on Nepal—Dept. of Pol. Science)

Qualifications Essential: (1) Consistently good academic record with first or high second class (B+) Master's Degree in Nepali Language or an equivalent degree of a foreign University.

Desirable: (in order of preference) (1) A Doctor's Degree or published work of an equally high standard. (2) Teaching experience of Degree/Post-Graduate classes. (3) Good knowledge of English and Hindi. (4) Aptitude for research work.

8. LECTURER IN SOCIOLOGY (One) (Mahila Mahavidyalaga).

Qualifications Essential: (1) Consistently good academic record with first or high second class (B+) Master's Degree in the subject or an equivalent degree of a foreign University. **Desirable** (in order of preference) (1) A Doctor's Degree or published work of an equally high standard. (2) Teaching experience of Degree/Post-Graduates classes. (3) Ability to teach both through English and Hindi medium. (4) Willingness to accept the hostel duties and residence in the Girls Hostel and charge of Co-curricular activities; and experience of Hostel work and extra curricular activities.

Note

1. Those who have applied in response to our earlier Advt. No. 21/74-75 need not apply again (for post No. 8 only).
2. Other things being equal preference will be given to a woman candidate (for post No. 8 only).
3. Provided that if a teacher appointed a lecturer, is not a Ph.D. at the time of appointment, it would be obligatory that he finishes his Ph.D. within five years of his appointment or gives evidence of equivalent research work. Further if he does not fulfil the above requirements within a period of five years of his appointment, his increment will be stopped till such time as he fulfils these requirements (applicable for post No. 7 and 8 only).

INSTITUTE OF TECHNOLOGY

9. PROFESSOR OF METALLURGY

(Process Metallurgy) (One)

Qualifications Essential:

(1) A Doctorate Degree in the subject or published work of an equally high standard. (2) Consistently good academic record with first or high second class (B+) Master's Degree in the subject or an equivalent degree of a foreign University. (3) About ten years experience in a responsible position in teaching/research/industry in an area of non-ferrous or ferrous process metallurgy. (4) Ability to guide research/development work as evidenced by publications/project reports in any aspect of process metallurgy such as chemical/extractive/industrial metallurgy but no

in mineral beneficiation. **Desirable:** (1) Corporate Membership/Fellowship of Professional Organisations/learned societies

Note: Those who have applied in response to our earlier Advt. No. 18/1975-76 need not apply again but they may send additional information if any.

10. READER IN PHARMACEUTICS (One)

Qualifications Essential

(1) A Doctorate Degree or published work of an equally high standard in the subject. (2) Consistently good academic record with first or high second class (B+) Master's Degree (M. Pharm.) with specialisation in Pharmaceutics or an equivalent degree of a foreign University. (3) About five years experience in responsible position in teaching the subject at Graduate & P. G. level research/industry. **Desirable:** (1) Specialisation in Bio-Pharmaceutics and experience of Pharmaceutical industry. (2) Research publication in reputed Indian and foreign scientific journals. (3) Membership of learned bodies and societies.

11. READER IN MECHANICAL ENGINEERING (Applied Mechanics) (One)

Qualifications Essential

(1) A Doctorate Degree or published work of an equally high standard in the subject. (2) Consistently good academic record with first or high second class (B+) Master's Degree in the subject or an equivalent qualification of a foreign University. (3) About five years equivalent degree of a foreign University. (4) About five years experience in responsible position in teaching/industry/research.

Desirable: (1) Specialisation in Applied Mechanics or Experimental Stress Analysis.

12. READER IN MINING ENGINEERING (One)

Qualifications Essential:

(1) A Doctorate Degree or published work of an equally high standard. (2) Consistently good academic record with first or high second class (B+) Master's Degree in Mining Engineering or allied field of Engineering (Civil Engg.) or an equivalent qualification of a foreign University. (3) Five years experience in responsible position in teaching/research/industry (candidates with industrial experience must have at least three years of teaching experience).

Desirable: (1) Experience in Planning and Design. (2) Membership of professional bodies and publications of papers of merit. (3) In case of candidates with qualification in allied fields they must have experience of teaching or industry in Mining Engg.

13. READER IN MINING ENGINEERING (One)

Qualifications Essential

(1) A Doctorate Degree or published work of an equally high standard. (2) Consistently good academic record with first or high second class (B+) Master's Degree in Mining Engineering

or an equivalent qualification of a foreign University. (3) Specialisation in Coal Mining and Mining Methods. (4) About five years experience in responsible position in teaching/research/industry.

Desirable: (1) Research publications in standard journals in the field of methods of working and planning and related subject. (2) Experience in Design of working and Industrial Management. (3) Published original work in journals of repute.

Note: Candidates holding first class Mine Manager's Certificate of competency and first class Colliery Manager's Certificate will also be considered if they do not hold the Master's Degree in Mining Engg. or Doctorate Degree respectively.

14. LECTURER IN ORE DRESSING (One)

Qualifications Essential:

(1) Consistently good academic record with first or high second class (B+) Master's Degree in Mining Engineering (Metalliferous Mining) or an equivalent qualification of a foreign University. (2) Some experience in teaching/research/industry.

Desirable: (1) A Doctorate Degree in the subject. (2) Experience of teaching and project work in Mineral Dressing/Ore Dressing.

15. LECTURER IN CIVIL ENGINEERING (Two)

Qualifications Essential:

(1) Consistently good academic record with first or high second class (B+) Master's Degree in the subject or an equivalent degree of a foreign University. (2) Some experience of teaching/research/industry with specialisation in Hydraulic Engineering/Structural Engg./Soil Mechanics and Foundation Engineering/Surveying and Photogrammetry.

Desirable: (1) Doctorate Degree in the subject.

Note: Those who have applied in response to our Adv. No. 11/76-77 need only apply again.

16. LECTURER IN MECHANICAL ENGINEERING (Four)

17. LECTURER IN PHARMACEUTICAL CHEMISTRY (One)

Qualifications Essential:

(1) Consistently good academic record with first or high second class (B+) Master's Degree in the subject concerned or an equivalent degree of foreign University. (2) Some experience in teaching/research/industry.

Desirable: (1) A Doctorate Degree in the subject concerned. (2) (a) Specialisation in fields of Mechanical Engg. (b) Aptitude for independent research (for post No. 16 only). (3) Specialisation in Pharmaceutical Chemistry (Synthesis) for post No. 17 only).

Note: Those who have obtained Doctor's Degree in the subject concerned will also be considered irrespective of the fact whether they have a Post-Graduate Degree in the subject or not (applicable for post Nos. 9 to 17 only).

18. LECTURER IN ENGINEERING PHYSICS (Two)

19. LECTURER IN PHYSICS (One)

20. LECTURER IN CHEMISTRY (One)

Qualifications Essential:

(1) Consistently good academic record with first or high second class (B+) Master's Degree in the subject concerned or an equivalent degree of a foreign University.

Desirable: (in order of preference) (1) A Doctor's Degree or published work of an equally high standard. (2) Teaching experience of Degree/Post-Graduate classes preferably in an Engineering Institution. (3) Ability to teach both through English and Hindi medium

Note: Provided that if a teacher appointed a lecturer is not a Ph.D. at the time of appointment, it would be obligatory that he finishes his Ph.D. within five years of his appointment or gives evidence of equivalent research work. Further if he does not fulfil the above requirements within a period of five years of his appointment, his increment will be stopped till such time as he fulfils these requirements (applicable for posts No. 18, 19 and 20 only).

INSTITUTE OF MEDICAL SCIENCES READER—Grade:

Rs. 1200-50-1300-60-1900 plus N.P.A. as per rules.

LECTURER—Grade:

Rs. 700-40-1100-50-1600 admissible to Medical Graduates only

21. READER IN MICROBIOLOGY (One)

Qualifications Essential:

(1) MBBS or equivalent qualification recognised by the Medical Council of India. (2) M.D./D.Phil./D.Sc. in Microbiology. (3) About three years teaching experience as lecturer in Microbiology.

Desirable: (1) Specialisation in Medical parasitology or virology or immunology. (2) Publications in Medical Microbiology.

22. READER IN ANATOMY (Histology) (One)

Qualifications Essential:

(1) MBBS or an equivalent qualification recognised by the Medical Council of India. (2) Post-Graduate Degree in Anatomy viz. M.Sc., Ph.D., D.Sc. (3) Teaching experience as Asstt. Professor/lecturer in Anatomy for three years in a Medical College.

Desirable: (1) Research experience and publications. (2) experience in teaching of Histology.

23. READER IN PREVENTIVE & SOCIAL MEDICINE (temporary likely to be made permanent) (One)

Qualifications Essential:

(1) MBBS or an equivalent qualification recognised by the Medical Council of India. (2) M.D. (P.S.M.) or Dr. P.H. or M.D. (Med.) with D.P.H. or speciality

Board of Soc. & Prev. Medicine (USA) or equivalent qualification. (3) Teaching/Research experience as Assistant Professor/lecturer in P.S.M. for at least 3 years in a Medical College.

Desirable: (1) Diploma in Public Health or Clinical discipline. (2) Research publications.

24. LECTURER IN PAEDIATRICS.
(Two posts)

Qualifications Essential:

(1) MBBS or an equivalent qualification recognised by the Medical Council of India. (2) M.D. (Paediatrics), Speciality Board of Paediatrics (USA) or M.D. (Medicine)/MRCP/ FRCP with DCH or MRCP/FRCP (with Paediatrics as a special subject) or an equivalent qualification. (3) About three years teaching experience in the subject in a Medical College/Teaching Hospital in the capacity of a Registrar or equivalent post of which one year should be after Post-Graduate qualification.

Desirable: (1) Research publications, training and experience in Neonatology and social paediatrics.

25. AUDIOLOGIST (One)

Grade: Rs. 700-40-1100-50-1300 plus NPA as per rules admissible to Medical Graduate only.

Qualifications Essential:

(1) MBBS Degree with MS (ENT) or equivalent medical qualifications recognised by the Indian Medical Council OR B.Sc. (Speech & Hearing/Physics, Chemistry and Mathematics) with M.Sc. (Audiology) of a recognised Indian or a foreign University OR B.E.(B.Tech. in Electronic Engg.(M.Sc. (Physics with electronics as special subject, with adequate knowledge of hearing aids, audiometers and other electro-medical equipment.

Desirable: (1) Experience of working in ENT Department of teaching Hospital for candidates possessing medical or speech & hearing qualification OR M.Tech. with experience of repair and maintenance of biomedical equipment in a Hospital for candidates with electronics qualification.

26. SPEECH THERAPIST (One)

Grade: Rs. 700-40-1100-50-1300.

Qualifications Essential:

(1) B.Sc. in Speech & Hearing (Audiology & Speech Pathology). (2) M.Sc. in Speech & Hearing with specialisation in Speech Pathology. (3) Ability to write and speak Hindi fluently. (4) At least one year experience of imparting speech therapy to patient with acquired speech defects and voice problems following major Head and Neck Surgery and Neuro-otological disorders in the ENT Dept of a Teaching Hospital.

Desirable: (1) Ph.D. in Speech Pathology of an Indian or foreign University. (2) Research and publications in Speech and Hearing.

UNIVERSITY HEALTH CENTRE
27. MEDICAL OFFICER (One)

Grade: Rs. 700-40-900-EB-40-1100-50-1300 plus NPA as per rules.

Qualifications Essential:

(1) MBBS or an equivalent qualification recognised by the Medical Council

of India. (2) M.D. (P.S.M.) or any clinical subject. (3) Experience of working in PSM Department or Public Health Work Or Domiciliary care programme Or clinical work.

Desirable: (1) Diploma in Public Health or clinical work.

Note: The selected candidate may be attached to any Unit of University Health Centre by the Superintendent, University Health Centre.

CENTRAL LIBRARY

28. ASSISTANT LIBRARIAN

(Two posts)

Temporary likely to continue.

Grade: Rs. 400-40-800-50-950 (likely to be revised).

Qualifications Essential:

(1) A first Or second class B.A./B.Sc./B.Com. Degree with first or second class M.Lib.Sc. Or A first Or second class M.A./M.Sc./M.Com. Degree with first or second class B.Lib.Sc. Degree or Diploma in Library Science. (2) Experience of having worked in a large Library.

Desirable: (1) Knowledge and experience of modern methods of book preservation including chemical treatment, lamination etc. of manuscripts and old books (for one post) (2) Knowledge, experience and training of reprography (for the other post).

Note:

1. Qualification in Library Science could be relaxed in the case of chemists who have special experience and training of book preservation (for one post).
2. Preference will be given to those who can handle independently modern reprographic equipment (for the other post).

29. PROFESSIONAL JUNIOR

(Four posts)

(Temporary likely to continue).

Grade: Rs. 400-40-800-50-950 (likely to be revised).

Qualifications Essential:

(1) A first or second class B.A./B.Sc./B.Com. Degree with first Or second class M.Lib.Sc. Degree Or A first Or second class M.A./M.Sc./M.Com. Degree with first Or second class B.Lib.Sc. Degree or Diploma in Library Science. (2) Experience of having worked in a large library.

Desirable: (1) Knowledge of modern techniques of classification and cataloguing. (2) Working knowledge of German, Russian or French. (3) Knowledge of modern Indian languages and/or Sanskrit. (4) Experience of documentation work.

FACULTY OF ARTS

30. GURU NANAK PROFESSOR OF SIKH RELIGION & PHILOSOPHY (One)

Grade Rs. 1500-2500.

Qualifications Essential:

(1) A first Or second class Master's Degree in Religious Studies/Religious Sikh Literature Or Gurumukhi Literature/Philosophy. (2) A Doctorate Degree Or published work of recognised merit.

(3) About ten years experience of teaching at Post-Graduate level in a University. (4) Ability to conduct and guide research. (5) Thorough grounding in the Sikh Scriptures and Philosophy. (6) Knowledge of Gurumukhi and a general background in world religions.

Note:

1. Qualifications and experience relaxable in case of candidates otherwise found suitable by the Selection Committee. Higher start admissible depending upon the ability and standing of the candidate.

2. Those who have applied in response to our earlier Advt. No. 11/75-76 need not apply again.

R. S. PATHASHALA

31. ASSISTANT TEACHER IN SAHITYA (One)

Grade: Rs. 440-20-500-EB-25-700-EB-25-750.

Qualifications Essential:

(1) A first Or second class Sahitya Shastri of any University Or recognised Institution. Candidates with Acharya Degree will be preferred. (2) Knowledge of related subjects (Nyaya etc.). (3) University Degree/ Diploma in teaching and or at least 3 years teaching experience up to Madhyama classes.

Desirable: (1) Research Degree. (2) Knowledge of Book editing.

THE UNIVERSITY OF KASHMIR
NOTICE

Applications are invited for the following posts:

- (i) Professor in English in the pay scale of Rs. 1500-60-1740-80-1900
- (ii) Reader in Hindi in the pay scale of Rs. 1100-50-1300-75-1600.

The applications for the post of Professor in English should be made in the prescribed form which can be had from the Registrar, University of Kashmir, Hazratbal, Srinagar-190006 on cash payment of Rs. 6/- or by sending a crossed postal order drawn in favour of the Registrar cashable at Srinagar post office alongwith a self-addressed envelope (5" x 11") with the necessary postage stamps. The applications for the post of Reader in Hindi should be made on a plain paper.

The details in respect of special and desirable qualifications for each post can be had from the office of the undersigned.

The applications for the post of Professor in English should reach the undersigned by or before **March 31, 1977.**

The application (on plain paper) for the post of Reader in Hindi should reach the undersigned by or before **March 21, 1977.**

The candidates who have already applied for the post of Reader in Hindi in response to this office advertisement notice of even number dated 29.11.1976 need not apply again.

Saif-ud-Din Soz
REGISTRAR

**SHREEMATI NATHIBAI DAMODAR
THACKERSEY WOMEN'S
UNIVERSITY
Bombay 400020**

Applications are invited on prescribed forms available from the University Office on payment of Rs. 5/- (by Money order or in Cash) for the following posts to be filled in at the postgraduate Department of the following colleges of the University, so as to reach the undersigned not later than April 5, 1977.

I. Sir Vithaldas Thackersey College of Home Science, Bombay

Sr. No.	Particulars of post	Medium of Teaching	No. of posts
1.	Professor in Child Development	English	One
2.	Reader in Food & Nutrition/ Home Management / Textiles & Clothing/Home Science Educa- tion Extension.	English	One

II. S. N. D. T. College for Women, Bombay

1.	Lecturer in Sociology	Marathi	One
2.	Lecturer in Music (for Sitar)	—	One

A. Qualifications:

Professor and Reader:

- A first or second class Masters degree of an Indian University or an equivalent qualification of a foreign University in the subject concerned.
- Either a Research Degree of the Doctorate Standard or an outstanding competence assessed from the review of the published research carried out during the five years preceding the date of the application or published literary or scientific work during the period.

Professor

- About ten years experience of teaching at a University or a college and wide experience of guiding research.

Reader:

About five years experience of teaching at a University or a College and some experience of guiding research.

Lecturer:

- A Doctor's degree or published work of an equally high standard and
- Consistently good academic record with first or high second class (B+) at Master's Degree in the subject concerned or equivalent degree of a foreign University.

Note: With reference to (a) above the University may recruit a person with a lower qualification only in case a person with the prescribed qualification is not available or is not considered suitable, provided that such persons will have to acquire the prescribed qualifications within five years from the date of the appointment.

Salary Scales:

Professor: Rs. 1100-50-1300-60-1600 plus allowances (Total initial emoluments about Rs. 1,340/- p.m.)
Reader: Rs. 700-50-1250 plus admissible allowances. (Total initial emoluments about Rs. 1130/- p.m.)

Lecturer: Rs. 400-40-720-EB-40-800-50-950 plus admissible allowances. (Total initial emoluments about Rs. 870/- p.m.)

Note:

- Only suitable candidates will be called for interview.
- Other things being equal preference will be given to candidates from scheduled castes/scheduled tribes/backward class communities.
- Salary scales are likely to be revised according to U.G.C. Norms

- Conditions of service and leave rules will be as laid down under the statutes from time to time.
- Work specifications of posts under I will be available with the application form.
- Proficiency in English desired even where teaching is through regional medium.
- Higher starting salary may be considered in exceptional cases.
- Persons will be selected accordingly to requirements of Media.

(Smt) Kamalini H. Bhansali
REGISTRAR

LUCKNOW UNIVERSITY

Advertisement No. 6/1977

Applications are invited from candidates possessing a graduate degree in medicine, including in the Schedules of the Medical Council of India Act, 1956, with a good academic record and postgraduate degree in the subject concerned, (M.D./M.S./Ph.D./D.Sc./F.R.C.S./M.R.C.O.G. or equivalent) for the following posts in the K.G. Medical College, Lucknow.

Professor in the grade of Rs. 1200-50-1500-60-1800:

- One temporary Professor of Experimental Medicine in the Department of Medicine.

Candidates must possess five years' teaching experience in the subject concerned as Reader or in an equivalent post. Experience in Laboratory Technique and Experimental Research shall be considered as an additional preferential qualification.

Readers in the grade of Rs. 800-50-1450 plus D.A. as admissible under the rules:

- One temporary Reader in Psychiatry.

Candidates must possess three years' teaching experience in the subject concerned as a Lecturer or in an equivalent post.

Lecturer in the grade of Rs. 650-30-800-40-1000-50-1300 plus Dearness Allowance as admissible under the rules:

- One temporary Lecturer in Medicine (Heart Diseases).
- One temporary Medical Officer of Health, Maternity and Child Welfare-cum-Lecturer in the Department of Social & Preventive Medicine.
- One Lecturer in Dermatology in the Department of Medicine.

Candidates must possess three years' teaching experience as Tutor, Registrar, Resident, Demonstrator or in an equivalent post.

General:

For purposes of qualifications required for the above posts the degrees obtained in a subject taught in a Department which is subsequently constituted into separate Departments, shall be deemed to be degree in the 'subject concerned' for the newly constituted department.

For posts in sub specialities in various departments special training and/or experience in the sub-speciality concerned, shall be an additional essential qualification.

It is not necessary to fill all/any of the advertised posts.

Candidates who have already applied for the above posts against this office advertisement Nos. 3/1975 of March 1975, 8/1975 of September, 1975 and 15/1975 of December, 1975, need not apply again and their previous applications will be considered.

Relaxation in the prescribed qualifications may be made in exceptional circumstances in accordance with the Ordinances.

Benefits of Provident Fund available for permanent posts as admissible under the rules on confirmation. Period of probation for permanent posts is one year.

Consulting practice in the speciality allowed for the posts No. 1 and 2 and general practice for post No. 3 and 5 provided it does not interfere with the official duties. The University will, however, be free to restrict or abolish consulting/private practice altogether at its discretion in which case the prescribed non-practising allowance will be given. No consulting/private practice is allowed for post No. 4 but the incumbent will be allowed non-practising pay and non-practising allowance @ 25% of the pay each (subject to a maximum of Rs. 300/- p.m. each). These conditions are subject to such amendments as the University may make hereafter.

Applications on the prescribed form (available on request accompanied with a self addressed envelope of size 10 cm. x 23 cm. free of cost from the office of the Registrar) with recent testimonials, publications etc. should reach the Registrar, Lucknow University, by Saturday, April 2, 1977. Candidates who are in service, should send their applications through proper channel. Application forms to outstation candidates will be issued upto Saturday, March 26, 1977.

Kaushal Kishore
Deputy Registrar

**CENTRE OF ADVANCED STUDY
DEPARTMENT OF HISTORY
ALIGARH MUSLIM UNIVERSITY
ALIGARH**

**Announcement of Teacher Fellowship
Programme**

The University Grants Commission has instituted a scheme of Teacher Fellowship under Faculty Improvement Programme, in order to provide research facilities to the teachers of Colleges offering undergraduate instructions in Humanities including Social Sciences and Science subjects.

The Centre of Advanced Study, Department of History, AMU, invites applications from the teachers of history in undergraduate and post-graduate colleges, for the above award, to enable them to undertake the research at our Centre.

Value:

In addition to the salary and all allowances to be provided by the concerned college authorities, the teachers selected under the above award would be entitled to a living expense allowance of Rs. 250/- per month from the University Grants Commission, in case the teacher belongs to a place other than Aligarh, from the date of his joining research, alongwith a contingency grant of Rs. 1000/- per annum. The college concerned will be entitled to the salary of the substitute who may be appointed by the college in accordance with the rules framed by the State Government/University concerned under the present salary revision of teachers.

Eligibility:

Ordinarily the applicant must have secured first or high second division (above 55%) marks in M.A. in history.

The candidate admitted to Ph.D., will be required to obtain M.Phil. degree. The minimum requirements for the M.Phil. degree in history are a dissertation and courses of 16 credits (400 marks).

The requirements will not be waived in any case, whatsoever.

The selected candidate will normally be required to pass the papers and submit the M.Phil. dissertation within the first four semester (2 years) following his admission. If he fails to complete these requirements within the specified period, his admission/fellowship shall be liable to be cancelled.

Duration:

The award of the fellowship under the above scheme is tenable for one/three years, as the case may be.

The last date for submission of application forms, obtainable from the office of the undersigned, is **26th of March 1977**.

The undersigned would be happy to provide any further information that may be desired by any intending applicant.

Sd/-

**Irfan Habib
Head of the Department**

BANARAS HINDU UNIVERSITY

(Advertisement No. 19/1976-77)

Applications are invited for the following faculty positions. Where the number of posts are more than one, it has been mentioned within the bracket in the grades specified below:

GRADES:

PROFESSORS
READERS
LECTURERS

— Rs. 1500-60-1800-100-2000-125/2-2500.
— Rs. 1200-50-1300-60-1900.
— Rs. 700-40-1100-50-1600.

I. FACULTY OF ARTS:

A. Professors in:-

1. Urdu
2. English
3. Library and Information Science

Area of specialisation

Contemporary Literature.
Experience in Modern
Techniques of Library
Science

B. Readers in:-

1. Ancient Indian History, Culture & Archaeology (Three—inclusive of one in Mahila Mahavidyalaya)
2. Art and Architecture
3. Philosophy

Pre-history/Numismatics
Epigraphy for two posts
out of three.

Inconography/Western Art
History.

Modern Symbolic Logic/
Navya Nyaya.

Linguistic/Language teaching.

4. Hindi
5. Pali
6. Physical Education
7. Journalism & Mass Communication

Communication, research
preparation of teaching
material, Seminar publication.

C. Lecturers in:-

1. Art and Architecture (Two)
2. Arabic
3. Persian
4. Journalism & Mass Communication
5. Hindi (Mahila Mahavidyalaya)
6. Urdu (Evening College)

General Art History—for one post
and Eastern Art for the other.
Modern Arabic.
Modern Persian.
Radio and Oral Communication
(T.V. & Film Journalism).

II. FACULTY OF SOCIAL SCIENCE:

A. Professors in:-

1. Economics
2. Psychology

Planning/International Trade.
Clinical/Industrial Psychology.

B. Readers in :-

1. History
2. Political Science
3. Sociology (two-inclusive of one in Mahila Mahavidyalaya).

Non-Indian History.

III. FACULTY OF COMMERCE & MANAGEMENT STUDIES:

A. Professor in:-

1. Commerce

IV. FACULTY OF SCIENCE:

A. Professors in:-

1. Physics
2. Zoology
3. Geology
4. Geophysics
5. Computer Science

Experimental Nuclear Physics.
Cytogenetics.
Sedimentary environments.
Applied Geophysics.

B. Readers in:-

1. Chemistry (Two)

Chemical Spectroscopy/theoretical
chemistry for one post and
Structural Inorganic Solid State
Inorganic chemistry for the other
post.

2. Botany
3. Geology (Two)

Molecular Biology.
Mathematic Geology/Geo-tectonics/
paleontology/geothermics and
photo geology.

4. Geography (Three-inclusive of one in Mahila Mahavidyalaya)

Information and Data Processing
and Computer applications and
statistical geosciences for two posts
out of three

5. Geophysics (Three)
6. Mathematics & Statistics (Two)
7. Computer Science (Two)
- C. Lecturers in :-
1. Physics (Mahila Mahavidyalaya)
 2. Chemistry (Five-inclusive of two in Mahila Mahavidyalaya)
 3. Botany
 4. Zoology
 5. Geology
6. Geophysics (Four)
7. Statistics (Mahila Mahavidyalaya)
8. Computer Science (Two)
- V. FACULTY OF MUSIC & FINE ARTS: (Music Unit)
1. Professor
 2. Reader
 3. Lecturer
- VI. FACULTY OF ORIENTAL LEARNING & THEOLOGY:
1. Professor
 2. Lecturer
- VII. FACULTY OF EDUCATION:
1. Lecturer (Mahila Mahavidyalaya)

Meteorology for two posts;
Mathematics Geophysics/Meteorology communication system & data processing for one post.

Modern Areas of Pure Maths.

Chemical Spectroscopy/theoretical chemistry for one post and Solid State Inorganic and/Structural Inorganic Chemistry for two posts out of five.

Cytogenetics
Mathematic geology/geotectonics/paleontology/geothermics and photo-geology.

Applied Geophysics for one post, Meteorology for two posts and Mathematics Geophysics/Meteorology Communication system and data processing for one post

- (2) Preference will be given to those proficient in violin and/or sitar.
- (3) Ability to guide research.

LECTURER:

Essential qualifications:

- (1) First or high second class Graduate Degree or Diploma in Dance (Bharat Natyam) of a university or recognised institution.
- (2) A reputed dancer with proficiency in performing Art.

Desirable:

- (1) Knowledge of theory and history of Indian Dance.
- (2) Acquaintance with other styles of dances.
- (3) Ability to organise dance shows, ballets etc.
- (4) Teaching experience and ability to teach theory of dance.

Essential and desirable qualifications in respect of posts under VI.

PROFESSOR:

Essential qualifications:

- (1) A first or second class Shastra-charya or Acharya Degree in Shitya/Mimansa or an equivalent qualification in Sanskrit of a recognised institution.
- (2) Either a Research Degree of a Doctorate standard or published work of high merit.
- (3) About ten years' experience of teaching at a university or institution of repute.
- (4) Experience of guiding research.

LECTURER:

Essential qualifications:

- (1) A first or high second class Shastra-charya or Acharya Degree in the subject or an equivalent qualification of a recognised university.

Desirable:

- (1) A Doctorate Degree or published work of an equally high standard.
- (2) Teaching experience of Shastri/Acharya classes.
- (3) Ability to teach through Sanskrit medium.

Essential and desirable qualifications in respect of post under VII.

LECTURER:

Essential qualifications:

- (1) A first or second class Master's Degree in Education with a Master's Degree in Arts/Science.

Desirable:

- (1) A Doctorate Degree or published work of an equally high standard.
- (2) Teaching experience of Degree/Post-Graduate classes.
- (3) Ability to teach both through the medium of English and Hindi
- (4) Consistently good academic career.

NOTE:

- (1) Other things being equal preference will be given to women candidate (for posts in Mahila Mahavidyalaya).
- (2) Candidates for the posts of lecturers under I, II, III, IV above will be governed by the following proviso:
"Provided that if a teacher appointed a lecturer, is not a Ph.D. at the

Essential and desirable qualifications in respect of posts under I, II, III & IV.

PROFESSORS:

Essential qualifications:

- (1) A Doctorate Degree or published work of an equally high standard in the subject.
- (2) Consistently good academic record with first or high second class (B+) Master's Degree in the subject concerned or an equivalent degree of a foreign university.
- (3) About ten years' experience of Post-Doctoral research and/or teaching at a university or college.
- (4) Ability to guide research of a high standard.

READERS:

Essential qualifications:—

- (1) A Doctorate Degree or published work of an equally high standard in the subject.
- (2) Consistently good academic record with first or high second class (B+) Master's Degree in the subject concerned or an equivalent degree of a foreign university.
- (3) About five years' experience of Post-Doctoral research or teaching at a university or college.
- (4) Experience of guiding research.

LECTURERS:

Essential qualifications:

- (1) Consistently good academic record with first or high second class (B+) Master's Degree in the subject concerned or an equivalent degree of a foreign university.

Desirable:

- (1) A Doctorate Degree or published work of an equally high standard.
- (2) Teaching experience of Degree/Post-Graduate classes.

Essential and desirable qualifications in respect of posts under V.

PROFESSOR:

Essential qualifications :

- (1) First or second class Post-Graduate Degree in Vocal Music of a university or recognised institution with sound knowledge of theory and history of Indian Music and good reputation as a vocalist.
- (2) A Doctorate Degree (D.Mus./Ph.D. Mus.) or published work of an equally high standard.
- (3) About ten years experience of Post-Doctoral research and/or teaching at a university or college.
- (4) Ability to guide research.

READER:

Essential qualifications:

- (1) First or second class Post-Graduate Degree in Instrumental Music of a university or recognised institution and good reputation as an instrumentalist.
- (2) A Doctorate Degree (D.Mus./Ph.D. Mus.) or published work of an equally high standard.
- (3) About five years' experience of Post-Doctoral research and/or teaching at a university or college.

Desirable:

- (1) knowledge of theory and history of India Music.

time of appointment, it would be obligatory that he finishes his Ph.D. within five years of his appointment or gives evidence of equivalent research work. Further, if he does not fulfil the above requirements within a period of five years of his appointment, his increment will be stopped till such time as he fulfils these requirements".

These posts are for the period of Fifth Five Year Plan but likely to continue. The Benefit of Provident Fund/Pension, Dearness Allowance, House Rent Allowance and City Compensatory Allowance are admissible according to University rules. The retirement age of the faculty members is 60 years. The appointment will be made on two years probation on all permanent posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications for the posts will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Order for Rs 7.50 in favour of the Registrar, Banaras Hindu University towards the application fee. Application forms along with the leaflet of information will be supplied free of cost by the Registrar (Selection Committee Section), Banaras Hindu University Varanasi-221005, on receipt of 40 paise stamped self-addressed envelope of 23 cm x 10 cm size,

Candidates from abroad applying for faculty positions may apply on plain paper but their application should reach the University by the last date, mentioning all the relevant information such as their names, date and place of birth, Marital Status, Nationality, State of Domicile, Postal and Permanent address, Father's Nationality and address, Academic and Professional attainment, Full details of (a) Publications, (b) Research Projects Undertaken, Languages known, Visit to foreign countries and the names of at least 2 persons along with the report of the candidate's professional work who should also be requested by the candidates to send to the Registrar (Selection Committee Section), Registrar's Office, Banaras Hindu University the confidential report concerning the candidate.

Candidates called for interview for these posts will be paid actual second class Railway fare plus reservation charges for sleeper and/or actual Bus fare from the present residence both ways by the shortest route. No other expenses will be paid. Candidature of those who are abroad, will be considered in absentia, if so considered necessary.

Application for each post be sent separately along with attested copies of certificates in support of the qualifications and experience mentioned in the application and be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005, India.

Incomplete application in any respect will not be entertained for consideration.

Those who are in service should apply through proper channel.

M.O. or Cheque will not be accepted towards application fee.

The last date for receipt of application is 2nd April, 1977.

UNIVERSITY OF BURDWAN WEST BENGAL

Advt. No. 29

Dated the 2nd March, 1977

Applications are invited for following posts:

- (A) Department of English :
Reader—One;
- (B) Department of Commerce :
(i) Professor—One,
(ii) Reader—One;
- (C) Department of Chemistry :
Lecturer—One;
- (D) Department of Law :
(i) Reader—One,
(ii) Lecturer—One.

Scales of pay:

Professor—Rs. 1500-60-1800-100-2000-125/2-2500.

Reader—Rs. 1200-50-1300-60-1900.

Lecturer—Rs. 700-40-1100-50-1600.

Posts under A, B (ii) and D are permanent but appointment against one of the posts under D will be made immediately. Persons appointed will be on probation for one year. Posts under B(i) and C are lien bound for the present, but those appointed may be made permanent in due course if and after the posts become lien-free.

Qualifications required:

For A, B, C—(i) Minimum qualifications as prescribed by U.G.C.

For D—LL.M. with consistently good academic record.

Additional requirements in the case of A and B:

For Professorship—(i) At least ten years' teaching experience in post-graduate class; (ii) Competence to plan and supervise research project; (iii) Publication of sufficient merit.

For Readership—(i) At least five years' teaching experience in post-graduate class; (ii) Ability to supervise research work; (iii) Publication of sufficient merit.

Desirable:

For B(ii)—Post-graduate qualification in Management from any recognised University or Institute of Management.

For C—Some teaching experience at post-graduate level, a Doctorate Degree and research work in any of the fields of specialisation required.

For D(i)—(a) Doctorate Degree in Law or published work of an equally high standard, (b) First or High Second Class B+ Master's Degree in Law or an equivalent Degree of a foreign University, (c) Production of research papers of distinction or reputation as a teacher in Law Courses or experience of research guidance.

For D(ii)—(a) First or High Second Class (B+) Master's Degree in Law or

an equivalent Degree of a foreign University, (b) production of research papers of distinction or reputation as an efficient teacher in Law Courses or experience of research guidance.

Specialisation required:

For A—Comparative Literature.

For B(i)—Any branch of the subject.

For B(ii)—Organisation Behaviour/Industrial Psychology/Labour & Industrial Relations / Man-power Planning & Management of Human Resources/Labour Laws/Labour Economics.

For C—Theoretical Chemistry/X-Ray Crystallography and structure determination/spectroscopy/Solid state Chemistry.

Six copies of application in plain paper giving full bio-data, percentage of marks obtained in each examination passed and supported by attested copies of mark-sheets and certificates along with a fee of Rs. 5/- (payable at University Cash Counter or by Crossed I.P.O. drawn in favour of Finance Officer of the University) must reach the Office of the Registrar not later than 26.3.77.

A. K. Banerji
REGISTRAR

LUCKNOW UNIVERSITY

Advertisement No. 5/1977

Applications are invited for the following posts sanctioned under University Grants Commission Special Assistance Programme:

1. TWO READERS IN BIOCHEMISTRY in the grade of Rs. 1200-50-1300-60-1900

Qualifications Essential:

1.(a) A doctorate in the subject of study concerned or a published work of a high standard in that subject; and

(b) Consistently good academic record (that is to say the overall record of all assessments throughout the academic career of a candidate) with first or high second class (that is to say, with an aggregate of more than 54% marks) Master's Degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

2. Experience of teaching honours/post-graduate classes for not less than five years and published research work of high standard in the subject.

Preferential: Experience of teaching post-graduate classes and guiding research.

2. TWO LECTURERS IN BIOCHEMISTRY in the grade of Rs. 700-40-1100-50-1600

Qualifications Essential:

(a) A doctorate in the subject of study concerned or a published work of a very high standard in that subjects; and

(Contd. on Page 150)

**SHREEMATI NATHIBAI DAMODAR
THACKERSEY WOMEN'S UNIVERSITY
BOMBAY**

Applications are invited on prescribed forms available from the University office, on payment of Rs. 5/- (by money order or in cash) for the following posts to be filled in at the Leelabai Thackersey College of Nursing, Bombay so as to reach the undersigned not later than April 5, 1977.

- c. Candidates should be registered under Maharashtra Nurse's Act 1966 or at least be eligible for registration.

Clinical Instructor :

- a. Bachelor's Degree in Nursing
b. One year's experience of teaching in a school or college of Nursing or two years experience in a Hospital or Community Health Nursing.

- (d) Higher starting salary may be considered in exceptional cases.

- (e) Besides proficiency in English, person with working knowledge of Hindi/Marathi will be preferred.

**(Smt.) K. H. Bhansali
REGISTRAR**

Sr. No.	Particulars of post	Medium of teaching	No. of posts
1.	Lecturer in Nursing (one temporary & one permanent)	English	Two
2.	Sister-Tutors	"	Four
3.	Clinical Instructor	"	One
4.	Demonstrator (Temporary)	"	One

QUALIFICATIONS :

Lecturer :

- (i) A Doctor's degree or published work of an equally high standard : and

Or

AM.Phil. degree or a recognised degree beyond the Master's level or published work indicating the capacity of a candidate for independent research work.

- (ii) Consistently good academic record with first or high second class (B+) at Master's degree in Nursing Education or Community Health Nursing or Obstetrics or equivalent degree of a foreign University.

A person with 5 years teaching experience will be preferred.

Note : With reference to (i) above, the University may recruit a person with lower qualifications only in case a person with the prescribed qualifications is not available or is not considered suitable, provided that such person will have to acquire the prescribed qualification within five years from the date of his appointment.

Sister-Tutor :

- a. Bachelor's Degree in Nursing.
b. Two years experience of teaching in a school or a college of Nursing. Experience of Nursing in a Hospital or in a Public Health practice will be an additional qualification.

- c. Candidate should be registered under Maharashtra Nurses Act 1966 or at least be eligible for the Registration.

Demonstrator :

A First or Second Class Bachelor's Degree in any of the Science subjects viz. Physics, Chemistry or Biology.

Salary Scales :

- (i) Lecturer : Rs. 400-40-720-EB-40-800-50-950+admissible allowances (Total initial emoluments about Rs. 870/-)
(ii) Sister-Tutor : Rs. 350-15-470-20-550+admissible allowances (Total initial emoluments about Rs. 780/-)
(iii) Clinical Instructor : Rs. 250-15-400 + admissible allowances (Total initial emoluments about Rs. 640/-)

(iv) Demonstrator

Note : (a) Only suitable candidates will be called for interview.

- (b) Other things being equal preference will be given to candidates from scheduled castes/ scheduled tribes/ backward class communities.

- (c) Conditions of service and leave rules will be as laid down under the statutes from time to time.

**INDIAN INSTITUTE OF
TECHNOLOGY
KHARAGPUR**

ADVERTISEMENT NO. R/7/77.

Applications are invited for appointment to various academic positions in the following departments of the Indian Institute of Technology, Kharagpur (West Bengal):

Posts and Scale of Pay:

1. PROFESSOR : Rs. 1500-60-1800-100-2000-125/2-2500/- plus D.A. at admissible rates.
2. ASSISTANT PROFESSOR : Rs. 1200-50-13000-60-1900/- plus D.A. at admissible rates.
3. LECTURER : Rs. 700-40-1100-50-1600/- Plus D.A. at admissible rates.

Age :

1. PROFESSOR : Preferably below 50 years.
2. ASSISTANT PROFESSOR : Preferably between 30 and 45 years.
3. LECTURER : Preferably between 25 and 38 years.

Qualifications :

1. PROFESSOR :

Essential : First class Master's Degree or Second class Master's Degree with Doctorate Degree in appropriate field with a minimum of 10 years' experience in teaching at post-graduate level in an institution of University standard and research or development work, having specialised knowledge in one or more specified fields.

Desirable : (a) Research publications in reputed journals. (b) Experience in guiding research. (c) Ability to organise and develop laboratories in the specialised fields.

2. ASSISTANT PROFESSOR :

Essential : First class Master's Degree or Second class Master's Degree with Doctorate Degree in appropriate field with a minimum of 5 years' experience in

teaching and/or research in an institution of University standard, having specialised knowledge in one or more specified fields.

Desirable : (a) Publications in reputed journals. (b) Experience of carrying out independent research. (c) Corporate membership of a recognised professional institution.

3. LECTURER :

Essential : First class Master's Degree or Second class Master's Degree with Doctorate Degree in the appropriate branch of study with specialisation in one or more specified subjects with research or industrial experience of not less than 2 years.

N.B. : Relaxation of qualifications prescribed for the posts may be made by the appointing authority in case of posts for the department of Naval Architecture.

I. DEPARTMENT OF CHEMICAL ENGINEERING :

PROFESSOR*

Field of specialisation :

- (a) Chemical Engineering [Science]
- (b) Petroleum Refining Engineering and Petrochemicals.

II. DEPARTMENT OF NAVAL ARCHITECTURE :

PROFESSOR* ASSISTANT PROFESSOR* LECTURER*

Field of specialisation :

One or more specified areas in Naval Architecture and ship Building.

III. INDUSTRIAL MANAGEMENT CENTRE :

PROFESSOR *

Field of Specialisation :

- (a) Labour Management and Personnel Relation (b) Financial Management (c) Marketing Management (d) Industrial Engineering and Operations Research.

N. B. : Candidates with Engineering background will be preferred.

IV. DEPARTMENT OF MINING ENGINEERING :

ASSISTANT PROFESSOR *

LECTURER *

Field of Specialisation :

Assistant Professor : Mechanical Handling

Lecturer : Any branch of Mining Engineering.

V. DEPARTMENT OF METALLURGICAL ENGINEERING : ASSISTANT PROFESSOR *

Field of specialisation :

- (a) Non-ferrous Process Metallurgy and Corrosion (b) Ferrous Process Metallurgy and Furnace Technology/Metallurgical Design.

VI. DEPARTMENT OF AGRICULTURAL ENGINEERING:

PROFESSOR (appointment against this Post will be made on temporary basis)

Field of specialisation : Agronomy

VII. DEPARTMENT OF CHEMISTRY :

ASSISTANT PROFESSOR

Field of specialisation : Organic Chemistry

VIII. DEPARTMENT OF MATHEMATICS :

ASSISTANT PROFESSOR (appointment against this post will be made on temporary basis)

Field of specialisation : Any branch of Mathematics.

IX. DEPARTMENT OF AERONAUTICAL ENGINEERING :

PROFESSOR/ASSISTANT PROFESSOR

Field of specialisation :

- (a) Aerodynamics (b) Aircraft Structures (c) Aircraft Propulsion (d) Aircraft Design.

***N.B. :** Those who applied for the posts marked with (*) in response to advertisement No. R/18/76 need not apply again.

Only capable persons with uniformly good academic career, aptitude for teaching Post-graduate and Under-graduate Classes, Research and Development work need apply.

Adequate provision for reservation of posts for SC/ST candidates as per Govt. orders has been made. In case suitable candidates from these communities are not available, recruitment will be made from general candidates treating the post as dereserved.

Application form may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23 Cm. x 10 Cm. Applications accompanied with an application fee (non-refundable) of Rs 7.50 (1.87 for SC/ST candidates) payable by means of crossed Indian Postal Order to Indian Institute of Technology, Kharagpur at Kharagpur-2 Post Office should reach the Registrar, IIT, Kharagpur (West Bengal) by the

5th April (20th April for persons Abroad), 1977.

JAWAHARLAL NEHRU UNIVERSITY

Advt. No. Aca. III/2/77

Applications are invited for the post of an Associate Professor in the scale of pay of Rs. 1200-50-1300-60-1900 plus usual allowances in the School of Environmental Sciences of the University.

Qualifications: Essential:

- (a) Consistently good academic record with at least a first or high second class Master's degree in Geology or an equivalent qualification from an Indian/Foreign University; (b) A Doctorate degree in Geology or published work of a high order; and (c) About five years' experience of teaching and/or research.

Desirable: (i) Interest and experience in Geochemistry as evidenced by publications; (ii) Competency and/or interest in some other allied areas, such as, Environmental Geology; and (iii) Willingness to participate in inter-disciplinary teaching and research programmes involving Geology, Geochemistry, Biochemistry and Ecology.

Relaxation in any of the qualifications may be made in favour of persons of eminence or of high academic or professional distinction. It will also be open to the University to consider the names of suitable candidates who may not have applied.

The selected candidate will be expected to participate in the teaching and research programmes in the concerned disciplines in other Schools of the University as well as in the programmes offered in his own school.

Benefits of C. P. Fund-cum-Gratuity/G. P. Fund-cum-Pension-cum-Gratuity are available as per University rules.

Persons already in employment should route their applications through proper channel.

Second class (mail) rail fare (both ways) will be paid to candidates invited to appear for interview from outstation by the shortest route subject to the production of rail receipt.

Applications, on the prescribed form, obtainable free of cost from the University by sending a self-addressed and stamped envelope of 23cm x 10 cm. size to the Co-ordinator (Academic Affairs), Jawaharlal Nehru University, New Mehrauli Road, New Delhi 110057, should reach him latest by 31st March, 1977.

**INDIAN INSTITUTE OF
TECHNOLOGY KANPUR
IIT POST OFFICE
KANPUR-208016**

Advertisement No. 8/77

Applications are invited for 10 (ten) posts of Professors, Assistant Professors and Lecturers in the Department of Chemical Engineering. The Department is seeking individuals with ability and aptitude for teaching, research and development in the following areas :

1. Simulation, optimization and control in Chemical Processes.
 2. Process Engineering, Industrial Chemical process development, design and scale up. Special interest in natural products, petroleum processing, petrochemicals engineering, polymer science, separation processes, reaction engineering, chemical thermodynamics and transport processes.
 3. Food Engineering, Biochemical and Biomedical Engineering.
 4. Energetics, environmental pollution and control.
1. Professor : Scale of Pay Rs. 1500-60-1800-100-2000-125/2-2500.

Qualifications :

Doctorate degree with an excellent academic record with at least 8 years of professional experience of good quality outside the work for the degree.

OR

M. Tech. Degree with excellent academic record and 15 years industrial experience with brilliant record, outside the work for the degree.

The candidates must have demonstrated ability in teaching guiding and carrying out independent research as evidenced by significant contributions by way of publications of good quality in journals of repute of developmental project of equivalent merit.

2. Assistant Professor :

Scale of Pay : Rs. 1200-50-1300-60-1900.

Qualifications :

Doctorate degree with excellent academic record with at least three years of professional experience.

OR

M. Tech. degree with excellent academic record with atleast three years of industrial experience.

The candidates must have demonstrated ability in teaching, and independent research work as evidenced by adequate number of research publications of good quality in journals of repute or developmental project work.

3. Lecturers :

Scale of pay : Rs. 700-40-1100-50-1600.

Qualifications :

Doctorate degree with excellent academic record.

OR

M. Tech. degree with excellent academic record and atleast three years of teaching, research/Industrial experience.

The candidate must have ability for good teaching and independent research, evidenced by adequate publications or developmental work.

The Department of Chemical Engineering has an energetic and young faculty, and active postgraduate programme. The department is actively involved in sponsored research and development projects funded by Governmental agencies and Industry. There are well equipped laboratories in the department including pilot plant facilities. The Institute also has a Biosystems Laboratory. There is a well established computer Centre having IBM 7044, IBM 1401, IBM 1800, PDP 1 and TDC-316 computers and a group of experienced programmers. In addition the following Central facilities are available.

Liquid nitrogen and liquid helium plants, NMR, EPR, Mass Spectrometer, X-ray Plant, UV and IR spectrometers, Glass blowing shop, crystal growth facility, central instrumentation laboratory, precision machine shop, electron microscope, besides a large workshop for the fabrication of specialised research apparatus. The Institute has a well stacked library with more than 1,00,000 volumes and 1,300 periodicals.

The Institute has inter disciplinary programmes in the areas of Industrial and Management Engineering, Material Science, Computer Science, Nuclear Engineering etc. Candidates may be considered for joint appointments with the inter-disciplinary programmes.

Excellent residential housing, when available, is provided on Campus. The Campus facilities include a primary and a higher secondary schools, a health centre and a shopping centre. Besides there is a modern swimming pool.

In the category of Lecturer, one post will be reserved for SC/ST candidates. In the event of non-availability of SC/ST candidates the reserved post would be treated as dereserved.

Post are permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or GPF - cum - Pension - cum - Gratuity Scheme as may be opted according to rules.

The age of retirement is 60 years. During the first year the appointment will be on probation. Besides, pay, posts carry allowances as per the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview

will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 cm x 10 cm size. Applications should be accompanied by a postal order for Rs. 7.50 (Rs. 1.87 for Scheduled Castes/Tribes candidates).

Applicants from abroad may apply on plain paper enclosing a complete bio-data and names of three referees from whom reference letters may be obtained.

Applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016 U.P. (India) on or before 8th April, 1977.

**INDIAN INSTITUTE OF
TECHNOLOGY KANPUR**

Advertisement No. 6/77

Applications are invited for the following positions in Advanced Centre for Materials Science of the Institute. This Centre has been set up by the Govt. of India to undertake frontier type research and development on materials of national importance. As part of it certain basic facilities for preparation and characterisation of different types of materials are being set up. The centre will also provide consultancy services to industry and conduct short-term courses. Some inter-institutional activities in the above areas will also be fostered.

**I. SCIENTIFIC OFFICER 'B'/
RESEARCH ENGINEER 'B': 4 posts**

Pay scale : Rs. 1100-50-1600

Qualifications : Doctorate degree in Materials Science or related areas.

OR

M. Tech. (or equivalent) degree with at least 5 years of practical experience in a public or private undertaking with a record of meaningful development/ project activity. In exceptionally meritorious cases, the Selection Committee may relax required number of years of experience.

II. SCIENTIFIC OFFICER 'A'/RESEARCH ENGINEER 'A': 6 posts

Pay scale : 700-40-1100-50-1300

Qualifications : M. Tech. degree

OR

B. Tech. (or equivalent) degree with at

least 3 years of practical experience in a public or private undertaking with a record of personal accomplishments in developmental/ project activity. In exceptionally meritorious cases, the Selection Committee may relax the required number of years of experience.

The areas of specialization for posts I and II should any of the following :

- (i) Electronic/Magnetic Materials
- (ii) Composite Materials
- (iii) Novel Building Materials
- (iv) Crystal Growth
- (v) High pressure
- (vi) Electron Microscopy
- (vii) Mechanical properties of materials.

The selected candidates will be required to participate in the planning and installation of various facilities at the Centre as also some R & D projects assigned to them.

III. SENIOR TECHNICAL

ASSISTANT : 3 posts

Scale of pay : Rs. 550-25-750-EB-30-900

Qualifications : M. Sc. degree in Physics or Chemistry plus two years experience.

OR

B.Sc./Diploma in engineering plus eight years experience in a research laboratory.

IV. TECHNICAL ASSISTANT : 6 posts

Scale of pay : Rs. 425-15-500-EB-15-560-20-700

Qualifications : B.Sc./Diploma in engineering plus four years experience in a research laboratory.

Applicants for III & IV should have experience in maintenance of one or more of the following laboratories :—

- (i) Electron Microscope
- (ii) Scanning Electron Microscope
- (iii) X-ray
- (iv) Materials Testing
- (v) Electronic Instrumentation

V. LABORATORY ATTENDANT :

4 posts

Scale of pay : Rs. 210-4-226-EB-4-250-EB-5-290

Qualifications : 8th Class plus 5 years experience in research laboratory. The posts are temporary and appointments will be made for a period of two years on a contract basis.

For categories of posts mentioned at I and II three posts are reserved for SC/ST candidates.

For category of posts mentioned at III, one post is reserved for SC/ST candidate.

For categories of posts mentioned at IV & V, two posts are reserved for SC/ST candidates.

Besides pay posts carry allowances according to Institute rules which at present correspond to those admissible to Central Government employees stationed at Kanpur. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route. All applicants from Govt./Quasi-Govt. organizations, public undertakings should forward their applications through proper channel.

Applications for Scientific Officer 'B'/Research Engineer 'B', Scientific Officer 'A'/Research Engineer 'A', Senior Technical Assistant & Technical Assistant should be made on the prescribed forms, obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 cm. x 10 cm, size. Applications should be accompanied by a postal order for Rs. 7.50 (Rs. 1.87 for SC/ST candidates). For the post of Laboratory Attendant application should be made on plain paper, stating—Qualifications, experience, pay and present scale of post now held and other particulars and accompanied by an postal order for Rupee 1/- (0.25 paise for SC/ST candidates) in the name of the Registrar, Indian Institute of Technology, Kanpur should reach the Registrar, Indian Institute of Technology, Kanpur-208016 on or before 31st March, 1977.

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 37/76-77

Applications, on the prescribed form, are invited for the following posts, sanctioned under the Fifth Five Year Plan Scheme :

Scale of Pay

Professors—Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Readers—Rs. 1200-50-1300-60-1900 plus allowances.

Sl. No.	Name of post	Specialisation
1.	Professor of Law	Constitutional Law
2.	Professor of Zoology	Parasitology
3.	Professor of Botany	Plant Physiology & Cytogenetics.

Qualifications :

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) Atleast 10 years experience of teaching Postgraduate classes and guiding research.

4. Readers in Botany— (3 posts) (i) & (ii) Microbiology/Algae; Physiology/ Pteridology; and (iii) Biosstatistics/ Ecology.
5. Readers in Political— (2 posts) (i) International Organisation; and (ii) Political Behaviour.

Qualifications :

(a) A first or high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A Research Degree of a doctorate standard or published work of a high standard; and (c) Atleast five years experience of teaching Postgraduate classes and some experience of guiding research.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is 2nd April, 1977. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

Jamalur Rahman
REGISTRAR

Advertisement

Applications are invited for the following teaching posts for the postgraduate departments of this University.

Sl. No.	Subject	Name of the post	No. of vacancies	Field of specialization
1.	Chemistry	Reader	One	—
2.	Zoology	Reader	One	Entomology or Fisheries
3.	Physics	Reader	One	Preferably in Nuclear Physics
4.	Mathematics	Reader	One	—
5.	History	Lecturer	One	Preferably in Medieval Indian History
6.	Political Science	Reader	One	—
7.	Economics	Professor	One	Regional Economics & Planning
8.	Commerce	Professor	One	Preferably in Business Administration
	—do—	Reader	One	—
9.	English	Reader	One	—
	—do—	Lecturer	One	—

Scales of pay

Professor :	Rs.	1500-60-1800-100-2000-125/2-2500/-
Reader :	Rs.	1200-50-1300-60-1900/-
Lecturer :	Rs.	700-40-1100-50-1600/-

All posts carry usual allowances admissible under the rules in force in the university from time to time.

Qualification & experience

PROFESSOR

- The Professor shall be a scholar of eminence
- possess good academic record with a First or High Second class Master's degree in the subject
- have a Doctorate degree or published work of equivalent standard;
- have independent published research work of high standard in addition to the published work as in (iii) above; and
- be engaged in active research and have experience in guiding research for a considerable period as

evidenced by successful supervision of doctoral research.

- be a teacher for ten years out of which at least seven years should have been spent in regular teaching in Post-Graduate/Honours classes.

READER

- The Reader shall have a good academic record with a First or High Second Class Master's degree in the subject.
- A Doctorate degree;
- Independent published research work (in addition to the published work mentioned in (ii) above.
- teaching and research experience for eight years out of which at least five years should have been spent in regular teaching in Post-Graduate/Honours classes. Capacity to guide research shall be regarded as an additional qualification.

LECTURER

- A Doctor's degree or published work of an equally high standard
- consistently good academic record with First or High Second class (B+ or 55%) Master's degree in a relevant subject or an equivalent degree of a foreign university, and
- teaching experience will be considered as additional qualification.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (ii) above.

Provided further that if a candidate possessing a doctorate degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record (due weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's degree or give evidence of published work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Seven copies of the prescribed application-forms will be supplied to the candidates from the office of the undersigned on payment of Rs. 10/- in person or by bank draft drawn on the State Bank of India in favour of the Registrar, Berhampur University, Bhanja Bihar, Berhampur-7 Ganjam along with a self-addressed envelope measuring 22×10 cms. affixed with postage stamps worth of Rs. 0.85.

The applications duly filled in along with attested true copy of certificates, testimonials and publications, etc should reach the undersigned on or before 8.4.77. Applications received after the due date will not be entertained.

Candidates who are in service should apply through proper channel.

Persons in Government service selected for appointment shall be allowed leave salary and pension contribution for one year only if they wish to retain their lien under Government.

The prescribed period of experience for the post of Professor and Reader will be calculated up to the last date fixed for the receipt of application.

Candidates will be required to appear before the selection committee at their own expenses. Selected candidates will be required to join the post within one month from the date of issue of the appointment order.

The University reserves the right to fill up or not to fill up the posts advertised and/or to call only selected candidates for interview.

Sd/-
R.C. Rajguru
REGISTRAR

**SHREEMATI NATHIBAI
DAMODAR THACKERSEY
WOMEN'S UNIVERSITY**

Applications are invited on prescribed forms available from the University Office on payment of Rs. 5/- (by Money order or in cash) for the following posts to be filled in at the P. V. T. College of Education for Women, Bombay, so as to reach the undersigned not later than April 5, 1977.

**PREFERABLE QUALIFICATIONS
FOR POST 1 :**

- (a) Diploma in vocational Guidance of Government of Maharashtra or equivalent and some experience of guidance work or experience of work related to employment.
- (b) All things being equal lady candidates will be preferred.

University in the pay scale of Rs. 1500-60-1800-100-2000-125/2-2500 with usual dearness allowance as sanctioned from time to time by the State Government.

Qualifications

- Essential (a) A doctorate degree in the subject of study concerned or a published work of a high standard in that subject;
and
(b) Consistently good academic record (that is to say, that overall record of all assessments throughout the academic career of a candidate) with first or high second class (that is to say, with an aggregate of more than 54 percent marks) master's degree in subject concerned or equivalent Degree of a foreign university in such subject.

Where the Selection Committee is of opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) above.

Experience—Experience of teaching post-graduate classes for 10 years and of conducting and guiding research work for a considerable period.

Preferential—High academic distinctions.

Post is temporary but likely to be made permanent. Benefits of Provident Fund available as admissible under the rules on confirmation. Application on the prescribed form available on request accompanied by a self addressed envelope of the size 28 x 13 cm. having postal stamps of Rs. 2.85 from the Registrar, Kumaun University (free of cost) be submitted by **MARCH 31, 1977**. Applications of the candidates already in service must be sent through proper channel.

Sd/-

**D. N. Agrawal
REGISTRAR**

Sr. No.	Particulars of posts	Medium of teaching	No of posts
1.	Lecturer in Guidance & Counselling	Marathi	1
2.	Lecturer in Education	Gujarati	1

QUALIFICATIONS : POST 1 & 2 : SALARY SCALES :

- (i) A consistently good academic record with first or high second class (B+) at Master's degree in Education or Psychology or an equivalent degree of a foreign University, and
- (ii) A M.Phil. degree or a recognised degree beyond the Master's level or published work indicating the capacity of a candidate for independent research work.

Lecturer : Rs. 400-40-720-EB-40-800-50-950+admissible allowances
(Total initial emoluments about Rs. 870/- p.m.)

Note :

- (a) Only suitable candidates will be called for interview.
- (b) Other things being equal, preference will be given to candidates from scheduled castes/scheduled tribes/backward class communities.
- (c) Salary scales are likely to be revised according to University Grants Commission's norms.
- (d) Conditions of service and leave rules will be as laid down under the statutes from time to time.
- (e) Job specifications will be available with the application forms.
- (f) Higher starting salary may be considered in exceptional cases.

Note : With reference to (ii) above, the University may recruit a person with a lower qualifications only in case a person with the prescribed qualifications is not available or is not considered suitable, provided that such person will have to acquire the prescribed qualifications within five years from the date of his appointment.

**ADDITIONAL QUALIFICATIONS :
Post No. 1**

- (a) Proficiency in English

Post No. 2

- (a) In order of priority

- (i) M. A. with History or Geography
- (ii) M.Sc. with Geography
- (iii) M.A. with Hindi or an equivalent degree/diploma.

- (b) Persons having experience of teaching the method specified and having guided students for at least 3 years at a College of Education will be preferred.

**(Smt)K. H. Bhansali
REGISTRAR**

**KUMAUN UNIVERSITY, NAINITAL
Advertisement No. 4769**

Dated 28 Feb, 1977

Applications are invited for one post of PROFESSOR in Education for Almora Constituent College, of the

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Thirumalachar, M. J. Kasthuri. Pattern of behaviour under stress, in man and animals and some aspects of drug dependence. University of Poona.

Anthropology

1. Shrivastava, Shashi Naresh. A comparative study of the Mahars and Mangas of Maharashtra. University of Poona.
2. Veera Raghava Rao, Devalraju. Konda Doras : A study in social-cultural change. Andhra University.

Sociology

1. Gupta, Mangilal. Ujjain zile ke grameen jan jivan par samajik adhiniyamon ka prayas. Vikram University.
2. Mudiraj, G. N. Rajaram. Village studies in India : A critical appraisal. University of Poona.
3. Panikkar, A. Narayan Gandhidev. Factory labour : A study in commitment. University of Poona.
4. Parmar, Durga. Shramjivi mehalayen aur samkaleen parivarik sangathan. Vikram University.

Political Science

1. Basu, Asit Kumar. Problems of rural self government in West Bengal. University of Calcutta.
2. Chattopadhyay, Saral Kumar. Social and political ideas of some representative thinkers of Bengal in the era of the Swadesi movement, 1905-1911. University of Calcutta.
3. Fadia, B. L. Nature and role of pressure groups in Indian politics : A critical study. Bhopal University.
4. Gauba, Om Prakash. The concept of social justice with special reference to the Indian constitution. University of Delhi.
5. Rawal, Narender Prakash. Manu and Kautilya ke sandarbhb mein prachin bharatiya rajniti darshan mein mantrimandaliya pranali. Indore University.
6. Sarma, Konduri Sreerama Narasimha. The administration of benefits under the employees' state insurance scheme. University of Delhi.

Economics

1. Bhanage, Bhalchandra Shankar. Regulation and economics of the electricity supply industry in Maharashtra : The study of a public utility. University of Poona.
2. Chourasia, Bhagwan Das. Madhya Pradesh ke Sagar sambhag mein paan udyog. University of Saugar.
3. Jain, Navinchandra Shikharchandra. Regional economic planning in a sugar factory area. University of Poona.
4. Mishra, Girish. Agrarian problems of a permanently settled district of Bihar, Champaran 1857-1947 : A case study. University of Delhi.
5. Varshney, Babu Lal. Rewa sambhag mein sahkari vipnan : Shahdol zile ke vishesh sandarbhb mein. Awadhesh Pratap Singh University.
6. Verma, Nand Kishore. Jawaharlal Nehru's concept of socialistic economy and its impact on Indian economic planning. Awadhesh Pratap Singh University.

Law

1. Ram Singh. Matrimonial law in Nepal. University of Delhi.

Education

1. Dekhtwala, Pramila Bhupendra. Teacher morale in secondary schools of Gujarat. Maharaja Sayajirao University of Baroda.
2. Gayatonde, Naryan Vishvambhar. The problems of social education in India with special reference to Maharashtra, Gujarat, Rajasthan, Madhya Pradesh and Mysore (Karnatak). University of Poona.
3. Gupta, Prativa Das. An exploratory study into the factors affecting teacher efficiency and their implications for teacher training programme at the primary level. University of Delhi.
4. Prabhjot Kaur. A career pattern study of higher secondary girls of Delhi with reference to a career planning programme for them. University of Delhi.
5. Tikmani, Saman Choithram. A critical evaluation of administration of elementary teacher's education in Gujarat. Maharaja Sayajirao University of Baroda.

Commerce

1. Poddar, Iswari Prasad. Labour welfare in a developing economy. University of Burdwan.
2. Ratnam, Chaganti Satya Venkata. A study of some aspects of the human factor in Visakhapatnam. Andhra University.
3. Satyanarayana, Yalamati. Management planning and control systems in state transport undertakings. University of Poona.

HUMANITIES

Philosophy

1. Chakravarti, Sibapada. Analysis and philosophy. Rabindra Bharati University.
2. Deshpande, Sharadchandra Sakhamam. A critical examination of Gaudapada's philosophy in Mandukya Karikas. University of Poona.
3. Saharia, Anuradha. The problems of perception with special reference to Ayer, Austin and Ryle. University of Delhi.
4. Sandu, Gursharn Singh. A critique of the social philosophy of Bertrand Russell. Punjabi University.

Linguistics

1. Babu, B. A. Prabhakar. A phonological study of English spoken by Telugu speakers in Andhra Pradesh. Osmania University.
2. Pankhuankhatiya, P. R. A synchronic comparative study of modern Thai and modern Lanna : A study in contrast. University of Poona.

Literature

English

1. Chakrabarti. Amulyakumar Writings of Jawaharlal Nehru : A literary estimate. University of Calcutta.
2. Pal, Santosh Kumar. Poetic drama in the early nineteenth century : Major romantics. University of Calcutta.

Sanskrit

1. Apte, Usha Mukund. The sacrament of marriage: A review of the material from vedic period to dharmaśāstras. University of Poona.

2. Mukhopadhyay, Bimlakanta. Dhvanitattva samiksha. D. Litt. University of Burdwan.

3. Sjöman, Norman Ernest. A study of memory. University of Poona.

4. Tiwari, Anant Sharan. Madhva and the veda: A study of Dvaita interpretation of vedic myth. University of Poona.

Hindi

1. Athavle, Raghunath Purushottam. Adhunik Hindi Krishna Kavya. University of Poona.

2. Ayodhya Pd. Singh. Bundeli bhasha ke shabd samarthyā. Awadhesh Pratap Singh University.

3. Chandreshwar Pd. Singh. Adhunik Hindi gadya ke teen shailikar Acharya Sheopujan Sahay, Raja Radhika Raman Pd. Singh, Shri Ram Briksh Benipuri. University of Bihar.

4. Chopra, Interjeet. Hindi kahani par astitvavad ka prabhav, 1950-1970. University of Delhi.

5. Dwivedi, Yogendra Nath. Chhayavad purva Hindi kavya mein yugbodh (samsamayekta), 1850-1920. University of Bihar.

6. Ganesh Prasad. Hindi shodh: Dishayen, pravartiyān evam uplabdhiyan. University of Bihar.

7. Goswami, K. M. Sant kavya mein nari. Gujarat University.

8. Gupta, Asha. Maithilisharan Gupta ke kavya ke sanskritik adhar. Osmania University.

9. Kachhwaha, Shyama Ladhusingh. Rajasthan ke shringarik lokgeet. Maharaja Sayajirao University of Baroda.

10. Kapoor, Chandra Prabha. Khari Boli ke aitihasik Mahakavya. University of Delhi.

11. Ponkshe, Vinayak Ganesh. Marathi santan ke Hindi Bharudgeet Ek anushilan. University of Poona.

12. Sharma, O. P. Hindi gadya sahitya mein alankar yojana. D. Litt. University of Jammu.

13. Tandon, Sarita. Prasad ke chhand yojana University of Delhi.

14. Verma, Kanhaiya Lal. Bundeli lok sahityā Ek anushcelan. Awadhesh Pratap Singh University.

Urdu

1. Haidry, Shabbir Ahmad. Life and works of Afzal Sarkhush. University of Bihar.

Bengali

1. Gupta, Kshetta Gopal. Bankim Chander Upanyasa-silpariti. Rabindra Bharati University.

2. Kamilya, Mihir kumar. Narahari Chakravarti Jivani-orachanavali. University of Burdwan.

Tamil

1. Arunachalam, K. P. A critical study of the differences in the commentaries of tolkappiyam with special reference to Akatthinai Iyal and Puratthinai Iyal. University of Madras.

Kannada

1. Kulkarni, Aravind Krishnarao. Anandakanda: A biographical critical study of poet Anandakanda. Karnatak University.

Telugu

1. Padmanabha Rao, R. A. A critical study of works of Kandukuri Rudrakavi. Sri Venkateswara University.

2. Sriramamurti, U. Modern trends in Telugu novel. Sri Venkateswara University.

Geography

1. Srivastava, Bina. The rural-urban fringe of Delhi: Structural and functional patterns. University of Delhi.

History

1. Pandey, Rameshwar Prasad. Mahadji Shinde and the Poona Durbar: A study in political relationship in Maratha mandal. Indore University.

2. Roy Burman, Bina. Religion and politics of Tibet: 1951-1965. Jawaharlal Nehru University.

Youth Activity in the Universities

(Contd. from page 140)

is a latent sense of rivalry between the two. The NSS of course mostly loses because its resources are much poorer and much more thinly spread out. When it comes to doing social service, the NCC cadets do not always give evidence of the same kind of competence and commitment as the NSS boys do. Whether the students compare themselves with one another or not, members of the community certainly do so. The situation is not free from ambiguity and it is important to give some thought to this aspect of the problem. An equally important and related problem is the kind of balance that should prevail between these two sectors of youth activity.

One concluding suggestion may be made. Apart from youth activities referred to above, there are a number of other problems relating to the young people. Quite a few of them are being attended to but not in a well organised way. For example, most universities have Employment Bureaus. This facility however is not available even to some of the better established colleges. After all the nature of the problem is the same whatever be the scale of the institution. Then there are cultural activities like song,

dance, drama, etc. A certain amount of activity under these heads does go on but it is neither well organised nor properly professionalised. In consequence, standards of performance remain rather unsatisfactory. Then there are problems like medical facilities, counselling, vocational guidance and such other matters. In regard to most of these things there is a good deal of haphazard activity. There is no plan or attempt to coordinate these various activities which form an important part of student welfare. Even such an important thing as management of hostels and eating arrangements are handled on an ad-hoc basis.

What is proposed is that we should develop expertise in all these various matters and group these various activities under the broad heading of student services or some other equally expressive name. What requires to be emphasised is the fact that at their formative stage students need a lot of attention. If attention is available in time and in full measure things run smoothly. In the event of our not being able to make suitable organisational and financial arrangements, social discontent starts building up and that does not contribute, it goes without saying, to good education. □

CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from Periodicals received in AIU Library during February, 1977.

EDUCATIONAL PHILOSOPHY

- Dubey, S.C. "Theories and goals of education: A third world perspective". *Prospects* 6 (3); 1976 : 349-63.
- Goldwin, Robert A. "Future of liberal education". *Educational Record* 57 (2); Spring 76 : 111-15.
- Hester, James M. "United Nations University". *Unesco-Asia* 8 (2); 1976 : 1-6.
- Wager, Willis. "Academic significance of the free school". *Educational Record* 57 (2); Spring 76 : 125-8.

EDUCATIONAL PSYCHOLOGY

- Gunn, Alex. "Examfailure : The case of the home sick Geordie". *Times Higher Education Supplement* (275); 28 Jan. 77 : 11.
- Kurien, C.T. "Motivation of teachers". *New Frontiers in Education* 6 (4); Oct-Dec 76 : 50-78.
- Maehr, Martin L. "Continuing motivation : An analysis of a seldom considered educational outcome". *Review of Educational Research* 46 (3); Summer 76 : 443-62.
- Shavelson, Richard J., Hubner, Judith J., and Stanton, George C. "Self-concept : Validation of construct interpretations". *Review of Educational Research* 46 (3); Summer 76 : 407-41.

EDUCATIONAL SOCIOLOGY

- Barnabas, Manorama. "Influences bearing upon college students today and directions in which these influences operate". *New Frontiers in Education* 6 (4); Oct-Dec 76 : 1-49.
- Chilver, Henry. "Relevance" must be seen in a long-term perspective". *Times Higher Education Supplement* (278); 18 Feb 77 : 15.
- Grubel, Herbert G. "Reflections on the present state of the brain drain and a suggested remedy". *Minerva* 14 (2); Summer 76 : 209-24.
- Mc Naught, Carmel. "Motivating science students in Australian Universities". *Australian University* 14 (2); Sept 76 : 123-37.
- Rich, Harvey E. "Effect of college on political awareness and knowledge". *Youth and Society* 8 (1); Sept 76 : 67-80.

EDUCATIONAL ADMINISTRATION

- Dahrendorf, Ralf. "Autonomy—theory and practice". *Times Higher Education Supplement* (277); 11 Feb 77 : 5.
- Lewis, Darrell R and Dahl, Tor. "Time management in higher education administration : A case study". *Higher Education* 5 (1); Feb 76 : 49-66.
- Padmanabhan, C.B. "Innovation in educational administration : Performance budgeting". *Education Quarterly* 28 (3); Oct 76 : 1-5.
- Paul, Jose and Moorthy, Gayatri. "Humanising education to reassert man's versatility". *Yojana* 20 (23); 1-14 Jan 77 : 12-13.

CURRICULUM

- Mathews, John and Buckingham, David. "Resource based learning : A pragmatic approach". *Studies in Higher Education* 1 (2) ; Oct 76 : 159-68.

TEACHING

- Black, P.J. "Aims, processes and the engineering of teaching". *Studies in Higher Education* 1 (2); Oct 76 : 149-58.
- Robin, Arthur L. "Behavioral instruction in the college classroom". *Review of Educational Research* 46 (3); Summer 76 : 313-54.

EVALUATION

- Coombs, Fred S. and Luschen, Gunther. "System performance and policy making in West European education: Effectiveness efficiency, responsiveness, and fidelity". *International Review of Education* 22 (2); 1976 : 133-53.
- King, Russell. "Assessment in geography : Approaches to the formulation of objectives". *Studies in Higher Education* 1 (2); Oct 76 : 223-32.
- Klug, Brian. "To grade or not to grade : A dramatic discussion in eleven parts". *Studies in Higher Education* 1 (2); Oct 76 : 197-207.

ECONOMICS OF EDUCATION

- Azad, J. L. "Financing institutions of higher education in India : The need for a realistic fee policy". *Higher Education* 5 (1) ; Feb. 76:1-7.
- Dore, R. P. "Human capital theory, the diversity of societies and the problem of quality in education". *Higher Education* 5 (1) ; Feb 76 : 79-102.
- Dresch, Stephen P. "Demography, technology, and higher education : Toward a formal model of educational adaptation". *Journal of Political Economy* 83 (3) : June 75 : 535-69.
- Pratt, John. "Pooling : Some revised conclusions". *Higher Education Review* 8 (2) ; Spring 76 : 23-37.
- Sharma, R. C. "Drop-outs : An exploratory study". *Journal of Indian Education* 2 (3) ; Sept. 76 : 45-53.

PROFESSIONAL EDUCATION

- Huxley, Peter. "Curriculum development or disaster ?"—a course for agriculture". *Overseas Universities* (23) ; Dec 76 : 17-21.

ADULT EDUCATION

- John, V. V. "Non-formal education : New ways of learning". *New Frontiers in Education* 6 (4) ; Oct-Dec 76 : 84-92.
- Knox, Alan B. "Emerging directions in continuing higher education". *New Directions for Higher Education* (14) ; Summer 76 ; 67-82.
- Mc Ginn, Noel F. "Adult higher education for social change". *New Directions for Higher Education* (14) ; Summer 76 : 83-105.
- Mondale, Walter F. "Next Step : Lifelong learning". *Change* 8 (9) Oct 76 : 42-5.
- Naik, J. P. "Some perspectives on non-formal education". *Indian Journal of Adult Education* 37 (10) ; Oct 76 : 2-9.

COMPARATIVE EDUCATION AND COUNTRY STUDIES

- Bevan, C. W. L. and Maxwell, Ian. "Some thoughts on changes in British universities and universities associated with the Inter-University Council from the early sixties to the early eighties". *Overseas Universities* (23) ; Dec 76 : 3-9.
- Burn, Barbara B. "Access to higher Education in the Federal Republic of Germany and the United States". *International Review of Education* 22 (2) ; 1976 : 193-201.
- Faksh, M. A. "An historical survey of the educational system in Egypt". *International Review of Education* 22 (2) ; 1976 : 234-44.
- Joshi, D. D. and Rajeshwar Prasad. "Problems of higher Education in the context of development in India". *Agra University Bulletin* 7 (1-4) ; Jan-Oct 76 : 167-72.
- Pesqueira, Richard E. "Equal opportunity in higher education in the United States of America : Choice as well as access". *International Association of Universities Bulletin* 24 (2) ; May 76 : 96-100.
- Sen Gupta, Manjit. "Dnyana Prabodhinee : A Novel educational experiment". *Creativity Newsletter* 4 (2) & 5 (1) ; Aug 75 & Feb 76 : 49-53.

A.I.U. Publications

(A) On Examinations :

1. The Management of Examinations :

Deals with various aspects of management of examinations, namely, mechanical aids/computer in examinations, anatomy of malpractices and unfair means and coping with them, grades vs. marks and certain other practical aspects of conduct and management of examinations.

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2. Question Bank Book Series :

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University news

A CHRONICLE OF HIGHER EDUCATION & RESEARCH APRIL 1, 1977 80 PAISE



Dr. S. Chandrasekhar, Vice-Chancellor of Annamalai University, receiving the Degree of LL.D. (Honoris Causa) at the 14th annual convocation of Punjabi University, Patiala.

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**M. S. Ramamurthy
REGISTRAR**

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not necessarily reflect the policies
of the Association.*

Editor : ANJNI KUMAR

Non-Teaching Employees in West Bengal

Universities in West Bengal are faced with a serious crisis. The non-teaching university employees of West Bengal, numbering more than 8,000, went on strike from 8th March to 12th March. During this period the working of all the seven State universities was almost paralysed. But Calcutta felt the maximum impact because it has almost 7,000 employees out of 8,000.

The immediate cause for this sit-in was the adoption and implementation of Mukherji Committee's recommendations by the State Government. The disparity in pay structure of the different universities in Bengal, their staffing pattern and various other anomalies in their emoluments had been agitating the non-teaching staff for quite some time. This had created problems for the Government as well. With a view to restructuring and rationalising the pay scales so as to be at par with the State Government employees, a review committee under the chairmanship of Dr. P.B. Mukherji, former Chief Justice of Calcutta High Court, was appointed sometimes ago. The committee has recommended parity between the salary drawn by the university non-teaching staff and the corresponding State Government employees. They have been given the option to retain their existing scales of pay or to draw pay according to the revised pay scales provided certain conditions were fulfilled by end of March.

This position is not acceptable to the employees for various reasons. The main ground on which they have raised objection to the Government decision is that the new pay scales are in many cases inferior to the existing pay scales and naturally they would not accept these inferior scales. The annual increments under the new scheme have been much reduced and in some cases are even lower than what is already in existence. They have also pointed out that though the grades for officers and professors in universities and colleges have considerably improved in consequence of the U.G.C. recommendations, emoluments of non-teaching employees have been lowered.

The memoranda on this issue have been channelled through the Syndicate to the Government which were accompanied by occasional demonstrations and deputations by the employees but all efforts have been abortive so far. The University employees believe that the authorities are sympathetic and will cooperate with them to remove the injustices through arbitration. As a matter of fact the State Vice-Chancellors in their recent meeting with the Education Minister have emphasised these facts and have also appealed to the Chief Minister to open a dialogue with the striking employees.

In passing it may be mentioned that Dr. S.N. Sen, former Vice-Chancellor of Calcutta University, Mr. Dilip Chakravarty, two other members of the Review Committee, had held different views in the matter and had tendered their resignations from the committee in protest against the decision to bring down the pay scales of non-teaching university employees. In fact, Dr. S.N. Sen had suggested certain formulae and compiled data to prove that if the employees continue to enjoy the existing salary, the Government would in no way be a loser in the long run.

The State Government is still considering the demands of the employees. According to newspaper reports, the recent increase in dearness allowance announced by the State Government has left out the case of University employees. The State Education Minister recently said that the pay scales of the employees were not going to be revised and at present the question of any further amendments does not arise. Employees' Union leaders however claim that the strike has been a well-coordinated and successful one. In view of the coming examinations and possible inconvenience to the students they have decided to resume strike sometimes in April if their demands are not fulfilled.

Role of Universities in Environmental Studies

S. Santanagopalan*

Social and economic developments have many consequences and among them, the effects on the way people think and feel about themselves, and on the standards by which people organize their lives appear to be important. In the last 30 years, there has been a dramatic increase in the degree of industrialisation, in the rate of depletion of natural resources and in the affluence of the developed countries.

Industrialization has led to greater demands on raw materials for increased demands for energy. Man has used technology in his attempts to master his natural environment for several years. Cottage industries have become factories. Vast energy for the factories were obtained from coal, and in recent times, a considerable amount of energy is now being produced by burning petroleum and natural gas, by nuclear power stations and by using hydro-electric plants. The demand for energy appears to be insatiable. It is estimated that the demand for energy which was trebled between 1950 and 1970, is expected to be doubled further by the middle of 1980s. If the per capita rate of energy consumption and the population increase are compounded, the growth rate of energy consumption would be 10 fold in 50 years and hundred fold in 100 years.

This raises a very important issue in regard to environmental studies, because atmosphere pollution is a natural and unavoidable consequence of burning of coal and of oil. A few pollution can be removed and the effects of others can be reduced, but some pollution is absolutely inevitable. Of course, the Government being responsible for the welfare and health of the people, should take effective steps in finding solution for the environmental problems. But Government left to themselves may not be able to do much in this direction. Since the university is interested in the community which sustains, it has more responsibility in view of the increased public awareness about the environment. There is no doubt that universities have a powerful contribution to make to the solution of the environmental problem. The universities, by their commitment to research and to teaching and by the presence of all disciplines, should be the proper agencies who can give a real solution to the problem. Universities should become more involved in the management of environmental affairs.

Everybody agrees that environmental problems appear to be a global one; but they disagree on how to solve them. The difficulty in reaching agreement

on solutions raises because the social sciences as well as natural sciences are involved in the problem. Scientists may agree on biological facts, but when it comes to the question of interpretation of sociological, economic or political considerations, they may differ. Biological facts may give one solution but there may be several solutions to an environmental problem on social considerations and sense of values. Here the natural sciences, including engineering, can be combined with the social sciences and the humanities, and evolve a most acceptable solution. Because virtually all disciplines have some relevance to environmental problems. Solutions to environmental problems can be arrived at if there is a total disciplinary approach. Scientific research is the answer and this is possible by the participation of the university.

There is an urgent need for an increased public awareness and responsibility about the environment. There is also need for training of environmental experts. Thus teaching becomes an important factor in dealing with environmental problems. All these are possible only in the universities where teaching, research and training in a total disciplinary context can be organised. There is no doubt that universities have a powerful contribution to make to the solution of environmental problems. The university can design courses on environmental studies, both at the degree and diploma level.

The problems of urban studies and environmental studies have attained great importance in some of the advanced countries in the world. This bears testimony to the fact that some of the Universities have set up Chairs in these subjects, because of the new professional opportunities opening up in these fields to which the universities can respond by establishing postgraduate diploma programmes in these subjects.

The university can adopt a policy of gradual development of environmental studies, making use of the existing staff of the departments who combine their interests in their respective basic issues which concern the environmental studies. By doing so, a sizeable programme of the existing departments can be taken up with lesser cost to start with and the university may organise undergraduate studies leading to the training of climatologists, geographers, resource managers, sociologists and economists, ecologists, chemists, with a strong grounding in their basic discipline plus an appreciation of the current environmental problems. To build on this, a postgraduate diploma in environmental studies can be thought of. Active research programmes in a number of areas covering environmental studies may be thought of. As a supplementary, a series of symposia on environmental topics could be organised by the university.

As an adjunctive to the environmental studies, a department of Urban Studies can be organised. This can play an effective role in the modern days of urbanisation and help us solve many problems that arise therewith. Let us examine some of the sugges-

*Deputy Registrar, Madurai University.

tions for introducing courses on 'Environmental Studies' in universities.

In view of the growing interest in environmental problems, many people are concerned professionally with the environment at present, particularly about air, noise, water and land, population and recycling. Such people are those in some Government departments, dealing with environmental controls, managers of national parks and playgrounds, ecologists with commercial organisations, city planners and public health authorities. But there are many other people whose work is affected by environmental issues. In this group, we can include architects, chemical engineers, geographers, economists, teachers and journalists. People connected with any of these fields should be able to specialise in environmental matters. All subjects under the Sun come under the purview of the environmental studies. It would be necessary for a person to become a undergraduate in environmental studies to choose one major discipline with supporting subjects from a wide range available and dealing with other aspects of the environment. So the universities should take upon themselves the task of training suitable person who would be able to tackle a number of problems.

A course in environmental studies can be undertaken only by the graduates who have already have some relevant professional experience.

The following may be considered as the main subject of study.

- | | |
|-------------------|-------------------------|
| 1. Biology | 5. Economics |
| 2. Man in Society | 6. Mathematics |
| 3. Chemistry | 7. Physics |
| 4. Geography | 8. Teaching (Education) |

A biologist's contribution in solving environmental problem may be through the insights of ecology. In studying this, a broad back-ground in science subjects, i. e. introductory science course in biology, physics, chemistry, statistics and mathematics may be provided. The following topics may be covered : introductory ecology, genetics, plant structure and functions, climatology, animal structure and functions. Besides the following may be usefully added : introductory biochemistry, plant evolution, computing, physics and a little bit of calculus.

Besides the following topics may be studied : measurements in ecological system, vertebrate physiology, plant physiology, vertebrate zoology, animal structure and functions, biochemistry advanced genetics, electronics, biology of fishes, biology of mammals, cytology and evolution, micro climatology, numerical analysis.

They should study the man in the world of Life and the man in the Society. The following topics included under behavioural sciences should also be covered under environmental studies : (1) Person and Society (2) Introduction to the study of Society (3) Modern Communities (4) Elements of Indian Politics (5) Industrial Revolution, Aesthetics, structure of Law.

The relation of the individual to the physical environment should be studied. Several areas of recent developments, viz., environment psychology and ergonomics which concerns the relationship of the individual to machines or physical structures, may be profitably added.

Relevant courses is perception, or power to understand sensory processes and perception, perceptual development may be introduced. In order to handle this essential study, it would be necessary to include statistical courses such as Applied Statistics or Statistics for the Social Sciences. That is the studies of Biology and Mathematics are essential.

To understand and obtain a background in science subjects, elementary scientific principles should be taught as a general course. Based on this, it would be essential to have all the three chemistries later. An Introductory course in ecology is desirable. Study of Analytical Chemistry is also essential.

Studies of the atmosphere, the land surface and pattern of economic activity and settlements and the relationship that these bear to human well-being may also be included. The study of Geography and the other disciplines of earth sciences like Geophysics and Geology with their subsidiary fields such as petrology, palaeontology, sesimology or economic Geology may be usefully added.

The basic idea of the course should be to enable a person to have an informal view of the world in which he lives and be able to meet the needs of the specialist seeking a basic training leading eventually towards professional employment in the fields of urban planning, environment management, field geology and mineral exploration. The person should be equipped with basic additional knowledge in Physics, Mathematics and Chemistry, Human Geography, the Planet, Earth, Earth materials, etc. The overall views of human and physical global patterns which are of general interest to all students, may be included.

Geography of natural resources, urban geography and Climatology (meterology) may be included in the study. In the field of economics, there may be many branches which have a bearing on environment. The above as well as other allied branches of knowledge can be imparted in the courses organised by the universities. □

Brain Drain

G.D. Sharma*

The transfer of technically and highly qualified manpower from one country to another country is termed as brain drain. The definition is widened with the inclusion of highly qualified manpower who are working in the home country for research organizations and the governments abroad. It also assumed a further dimension when research projects financed by the developed countries were carried out in the home country and the results of such studies were used for general as well as sponsoring countries interest.

The brain drain i.e. reverse transfer of highly qualified manpower to developed country from underdeveloped countries has been seriously viewed. This is because this reverse transfer of HQM further widens the gap between developed and underdeveloped countries. The reverse flow of highly qualified manpower from underdeveloped countries to developed countries have been mainly in three branches i.e. engineering, medical and other professionals. A study conducted by Indian Institute of Applied Manpower Research in 1970 reported that as on 1967 about 25% of the total out turn of engineering degree holders, in 29% of the medical degree holders went abroad. The 5% of the total out turn of nurses in the same year went abroad. About 6% of the total out turn of veterinary scientists as on 1966 were issued passport. This suggests that quite a substantial amount of investment done on the training of medical/engineering graduates went abroad. It may be further said that the most productive years of such graduates were also spent in foreign countries. The magnitude of transfer of resources becomes more serious when it is viewed that such highly qualified manpower from a "critical mass"—which has a leadership quality and brings about change in the respective fields, and it is lost to the other countries.

There are however differences of opinions on the issue of flow of highly qualified manpower from underdeveloped countries to developed countries. There are people who view that since in such countries highly manpower are surplus in supply, there is no harm if some of such persons go abroad. Here it is a question which still remains answered (in the absence of data) whether those who went abroad were :

- a) employed
- b) unemployed
- c) had high potentiality of employment

in the home countries? There is another view that the resource transfer through these people from

abroad sometimes compensate for the loss. It is very difficult to accept this proposition also in the absence of data

It is also often stated that those who go abroad for higher studies they settle down there because of sluggish economic conditions in their home countries which do not offer any better job prospects. As against this there is also a proposition that such people since they receive their basic and higher education from the home country they have some sort of responsibility towards that country; although they may not initially get the comfortable life which a developed country offers. But they have to work in those conditions for the development of home countries. Besides this sluggish economic conditions often it has been alleged that Indian Bureaucratic set up encourages such persons to migrate to other countries because such bureaucratic rigidity are much less in those countries.

On the theoretical plains two types of views have been expressed very frequently. To mention them, they are namely Nationalistic view by Don Patinkin and Internationalist view by Herry G. Johnson. The view expressed by the latter author states that the free flow of highly qualified manpower in international market helps the maximisation of world welfare. As against this the view there is "nationalistic" view by the former author which states that migration of highly qualified manpower which forms a "critical mass" that can bring about a change and exert influence on government decision making and as well as do a good deal of research and development for the underdeveloped countries is a net loss to the underdeveloped countries.

Many issues are still unsettled. However, a study by UNCTAD had shown that the gains to the developed countries due to highly qualified persons working with them is much more than transfer resources to the underdeveloped countries in terms of aid from these countries. If a miopic view is taken one might feel contended by saying that since India is surplus in highly qualified manpower there is no harm if some of them migrate to other countries. But if a perspective view is taken it may be said that these very people by remaining in the country might bring about some change in society and exert influence on the government decision making and they may as well take the modern technology to the rural areas which in turn might help in the regeneration of rural economy.

In view of many unsettled issues, there is a need of a detailed study which examines the types of persons migrated to other countries, magnitude of net transfer of resources and the other effects on the national economy due to migration of such people or returning of such people to the home country. There is also a need for examining the view of migrants and potential migrants about the brain drain problem.

* Research Officer, A.I.U.

A Case of Elite Sportsmen

Amarjit Singh Sohi

The concept of sports participation has been regarded as sports involvement or sports consumption. Sports involvement is not a simple concept as it connotes several dimensions of behaviour pertaining to sports. These dimensions can be considered as motoric, cognitive and attitudinal in nature. Involvement in sports can be understood as primary and secondary (Kenyon 1969 : 78-79). Primary involvement is actual participation on the part of an individual who may do so for excellence (competition and increase in performance), recreation (pastime) and for health (fitness). Kenyon (1969 : 78-79) has described secondary modes of sports consumption which may be direct (Spectators) or indirect (Reading, listening and seeing sports on TV), sports production like arbitrators (officials etc.) and entrepreneurship (sports promoters, manufacturers, coaches etc). The wider coverage of the concept makes it imperative for empirical research, to operationalize the concept in terms of one of dimensions of sports participation. This limitation of the concept can help to avoid the pitfalls of conceptional confusions.

How does an individual starts involving in sports? Is there any relationship between the individual's social origin and the type of sport which he involves? It has been shown that the choice of sport of involvement is not dependent on purely chance, out an association has been ascertained between a type of sports involvement, sports involved and the social background of the individual. Sports involvement differences with respect to type of sport have been studied on the basis of various social parameters like, sex difference, age, education, occupation, social class, income, sibling position and cultural milieu of a society. Irrespect of these different social parameters, there exists a common phenomenon of socialization which is role learning and role enactment in sports involvement on the part of sports role aspirant. Approaches, diversified in nature dwelling on different academic leans, have been resorted to in studying the process of socialization in general. The popular approach to study the sports role socialization is "Social role—Social system", which has been used by Kenyon and others to study cross-cultural process of socialization in sports involvement.

Sports role socialisation is a dependent valuable and social system which is propensity inducing social milieu, is independent variable. The role aspirant having prerequisites (aptitude), is stimulated by a social system in which he finds himself and its members are important and significant ones to the incumbent. The interaction of the role

aspirant with significant others within the social system leads to the inculcation of propensity for the acquisition and internalization of a sports role. The most important and far influencing social systems are primary groups like, family, peer group and neighbourhood. The institutions like, the school and various organizations also contribute towards the sports role socialization.

Now, it becomes apparent that for sports role socialization certain social prerequisites (social properties in addition to aptitude) are essential and sport role socialization takes place within a social system, inducing propensity for its required degree. This would be illustrated with the help of the case of elite sportsmen of India. It shall also be shown that these sportsmen have got certain social characteristics and further it would be seen that how the primary groups provided a congenial social milieu, directly or indirectly, for their sports role socialization.

For this study, sportsmen of national repute of various sports, who came to the National Institute of Sports, Patiala for coaching camps during 1972-74, were taken as respondents. Out of 125 sportsmen, 96 filled the questionnaires properly. All these sportsmen have been taken as elite sportsmen because they have either represented the country or are the national champions. The distribution of the sportmen by their sports is given in Table 1. Amongst these elite sportsmen, there were six sportswomen also.

Table 1
Sportsmen by Their Sports

Sports	No. of Sportsmen	Percentage
Athletics	34	35.4
Basketball	21	21.9
Hockey	20	20.8
Gymnastics	8	8.3
Football	7	7.3
Badminton	6	6.3
Total	96	100

To find the rural/urban background of the sportsmen, they were asked to mention the place of living during their formative years of age i. e. upto 15 years of age. As expected, Table 2 shows that most

of the sportsmen are ruralite. This may look illusive when rural/urban population ratio in India is taken as the base. In this case, the urbanites are over-represented in this group. This, perhaps, apart from other factors, may be due to the fact that sports coaching has got formalized and has come to stay to a greater extent in urban communities. Sports coaching and facilities have not made their way in the rural communities.

Table 2

Place of Living of Sportsmen during
Their First 15 years of Age

Place	No. of Sportsmen	Percentage
Village	49	51.0
City	45	46.9
Both	2	2.1
Total	96	100

Indian religions as institutions have not provided a convincing influence on the recreative activities, physical in nature of its followers. In Europe and North American countries the Church has a good role in popularising sports though at a lower level. In India, on the other hand, the religions with martial leaning, have inculcated sportive chivalrous attitudes and respect for physical prowess. The religious affiliations of these sportsmen are given in Table 3. Half of the sportsmen are Hindus, one third Sikhs, about 9% Muslims and 8% Christians. The Sikhs and Christians are over-represented when all-India religious affiliations are taken into considerations.

Table 3

Sportsmen by Their Religion

Religion	No. of Sportsmen	Percentage
Hindu	48	50.0
Sikh	31	32.3
Muslim	9	9.4
Christian	8	8.3
Total	96	100

Educational attainment of the sportsmen is shown in Table 4. About one third of these sportsmen have studied upto matriculation and half of them have

studied beyond matriculations, but upto B.A. level. If masters and post-masters degrees are considered as higher education, it can easily be maintained that these sportsmen are not highly educated. Similarly, their achievements in professional education are almost nil. The technically qualified sportsmen who form a very small chunk of the sample, have undergone minor courses of smaller durations.

Table 4

Sportsmen by Their Educational Achievement

Educational Level	No. of Sportsmen	Percentage
Middle	2	2.1
Matriculation	30	31.3
Pre-University	19	19.8
Graduate	28	29.2
M. A.	12	12.5
Technical Education	5	5.2
Total	96	100

Amongst these sportsmen, about two third are following some calling for their livelihood (Table 5). The remaining are still studying in educational institutions. The employed sportsmen are shown distributed in Table 6 according to their monthly salaries. It is to be seen that most of the sportsmen, though they are national heroes, are not earning higher amounts from their callings. This shows that they are not in prestigious and higher positions.

Table 5

Sportsmen by Employment

	No. of Sportsmen	Percentage
Employed	64	66.7
Unemployed	32	33.3
Total	96	100

Table 6

Monthly Emoluments Drawn by the
Employed Sportsmen

Emoluments	No. of Sportsmen	As Percentage of the employed
Upto Rs. 200	2	3.1
Rs. 201-300	6	9.4
Rs. 301-400	22	34.4
Rs. 401-500	10	15.6
Rs. 501-600	5	7.8
Rs. 601-700	5	7.8
Rs. 701-800	6	9.4
Rs. 801-900	3	4.7
Rs. 901-1,000	3	4.7
Above Rs. 1,001	2	3.1
Total	64	100

The occupations of the fathers of the sportsmen, which are shown in Table 7, need some clarification. All the fathers who are in employment have been categorised under 'Service' category, those engaged in agricultural pursuits under 'cultivators' and those running some shops etc. under 'business'. The fathers who are in employment, are not holding very high position except two. They are working in officers at very mediocre posts. The fathers, who are cultivators, are not of "landlord" status. Most of them are marginal farmers having a small operational holdings. The fathers, who have been categorised as businessmen, run small shops and petty business. They are not 'business magnets' even in their locality. The above remarks about the father's occupations, can be supported through the analysis of their monthly earning which are shown in Table 8. Like their sons, they also earn a mediocre amount indicating their lower economic status. It is clear that the occupations and income of the fathers of these sportsmen are of low status.

Table 7

Sportsmen by Their Father's Occupations

Father's Occupation	No. of Sportsmen	Percentage
Servicemen	44	45.8
Cultivators	34	35.4
Businessmen	15	15.6
Others	3	3.1
Total	96	100

The social milieu, the sports involvements of the members of the various primary groups have shown in Table 9 (given on next page). Family, "peer groups" (friends) and neighbourhood have been considered. There are about one third sportsmen whose brothers also participate in sports and fathers of 26% sportsmen have

Table 8

Sportsmen by the Income of Their Father's

Father's Monthly Income	No. of Sportsmen	Percentage
Upto Rs. 200	2	2.1
Rs. 201-300	20	20.8
Rs. 301-400	12	12.5
Rs. 401-500	20	20.8
Rs. 501-600	12	12.5
Rs. 601-700	5	5.2
Rs. 701-800	5	5.2
Rs. 801-900	6	6.3
Rs. 901-1000	3	3.1
Rs. 1001 (above)	11	11.5
Total	96	100

been active sportsmen. About one fifth of the sportsmen have close relatives who have participated or are participating in some type of sports. Neighbourhood also provides same number of sportsmen. The members of "peer group" show a greater sports involvement and propensity towards sports as compared to the members of the other primary groups.

Motivation, through encouragement and reinforcement, can keep the role learning propensity alive and can enhance it to a higher degree. In addition to a favourable social milieu, these sportsmen have been constantly pushed towards the acquisition and learning of the sports role. The sustained encouragement by the primary have been shown in Table 10.

In order of degree of the role aspirants towards sports role socialization, family stands ahead of "peer group" and neighbourhood.

To sum up, the sportsmen do not belong to higher social class as seen from their position on the social correlates of stratification, like, education, income and occupation. The same is true in the case of their fathers. There is uneven representation of sportsmen as regard to religious affiliations and rural, urban background. These sportsmen have social milieu and inducement provided by the social system (primary groups), which induce them to attain higher degree of sports role socialization.

Table 9

Sports Involvement by the Members of Primary groups of Sportsmen.

Primary Group	Persons Involved in sports	No. persons involved in sports	As % of total(96)
Family	Father	25	26.0
	Brother	31	32.3
	Uncle	12	12.5
	Others close relatives	19	19.8
Community	Neighbourhood	29	30.2
Peer	Friends	51	53.1

Table 10

Social Facilitation by the Members of Primary Group Extended towards the Sports Involvement on the part of Sportsmen.

Primary Group	Member of the primary group extending social facilitation	No. of sportsmen	As % of Total (96)
Family	Father	37	38.5
	Brother	31	32.0
	Uncle	23	24.0
	Other close relatives	15	15.6
Community	Neighbourers	33	34.4
Peer	Friends (peer group)	51	53.1

[Courtesy : NIS Journal]

Crisis Facing Mankind

With the great problems that the world is facing, the coming generation of leaders will require all of the wisdom they can gather to help solve them. This is a critical time in world history, one that is unprecedented. Within the short space of a hundred years, a mere second in the history of mankind, we will have used up the bulk of the fossil fuels the cheap energy on which our recent prosperity has been dependent. Further, the population of the world is expanding rapidly and must level off either through planning or catastrophe. We are faced with a real prospect of an atomic war which would devastate mankind. The gap in prosperity between the developed and developing countries is increasing rather than decreasing. At a time when it is essential for all countries to co-operate to find solutions to the difficult problems, narrow nationalism and self interests are increasing. It is unconscionable that my own country with a population only a third that of India is using a large fraction of the world's irreplaceable resources. Our food production, of which we export a great deal, is dependent to a large extent on imported oil.

By the end of the century, the world's supply of fossil energy will have dwindled substantially and we have nothing satisfactory in sight to replace it. To survive, we will have to change our life styles, to learn how to live satisfying rewarding lives with much less dependence on energy and material goods

Extracts from the convocation address of Prof. John Bardeen of University of Illinois (USA) delivered at the University of Delhi.

that we now use. To do this, we can learn a great deal from India and its great sages of the past. Much more than the traditional role of the market will be required to limit our consumption.

This is a human rather than a scientific problem. The changes in life style required will be much more drastic in United States than in India. I hope that India can bypass the mistakes we have made and look toward a society which lives within its available resources. This implies that it should be self reliant in developing its own technology rather than to emulate that of the West. Technology developed elsewhere should be adopted to the country's needs and this means developing expertise in the relevant subjects.

Outwardly, science is proceeding at a rapid rate. There are remarkable new insights in understanding the very complex structure of matter and about the universe in which we live. Molecular biology is

giving a vast amount of information and a basis for understanding of life processes. Rapid advances are taking place in applied sciences : medicine, agriculture, engineering. It thus may appear that pure and applied sciences are doing exceptionally well. But scientists themselves are very concerned about the future.

The rapid advance has come in large part from increased government support of science. The United States has perhaps been a leader in this effort, and it is there that the problems are showing up first. For almost a decade funds for basic research have levelled off or are decreasing. Long term research in industry is also decreasing. There is increasing demand for relevance, near term results, from both industry and government. As a result, the best science may not be adequately supported. Funds go to projects with promise of near term pay off. They often fail because the basic knowledge required to solve the problem is not available. An example in the U. S. is the large programme of the National Institutes of Health to try to find a cure for cancer. At about the time the programme was initiated they dropped their support for organic chemistry which is certainly essential for any progress.

A government must decide on its own priorities, how much should go to the various branches of applied science, such as agriculture and medicine, how much to such basic fields as high energy physics and astrophysics which promise no practical returns but will increase our knowledge of the world in which we live, how much to chemistry, solid state physics, etc. These priorities should be set by the needs of the country and prospects for success. The scientists themselves should be aware of the practical problems requiring solution, most will want to contribute as much as they can to help solve them. But outside of these general priorities, funds within a given field should be allocated to those doing the best science. To see that advances in science are utilised, there should be close interaction all through the chain from basic science, applied research, development, engineering and production. Person to person contacts are much more productive in getting things done than government decree. Such interactions are not easy to achieve; it is something that one must promote by continuous efforts. This may be done in a research institute which covers a large part of the spectrum. Technology transfer from government laboratories or universities to industry is difficult unless the industries themselves have research efforts that overlap those in research institutes or universities.

To create the right environment in which scientists are aware of practical problems to be overcome and engineers in industry are familiar with progress in the relevant scientific areas is difficult but can be done with proper organisation. The most difficult decisions are those that determine priorities for different fields. Demands on energy and other scarce resources should be an important criterion in setting priorities. □

1. The Management of Examinations: Edited by Amrik Singh, H. S. Singha, AIU, 1976; price: Rs. 35; pages: 258

The book is a collection of papers by diverse hands, covering a fairly wide range of problems in the area of Indian University Examinations, analysing them systematically and scientifically, and offering solutions and making some constructive proposals. It makes no claims to exhaustiveness in treating this subject of vital significance to our education system. Nevertheless, the components covered include undergraduate examinations in India, the confidential operations required, evaluation procedures, computer and other mechanical aids in examinations, questions banks, statistical innovations, socio-economic aspects of examination, and semester system.

The basic assumption that rightly informs all the papers as stated in the preface is : 'planning improvements in the present framework itself.' No system, with its basic structure, can easily be thrown overboard, nor is there a need for it in the area of examinations in India, are perhaps, entire education.

Some of the problems have already become dated or have assumed a new dimension. The problems of the appointment of paper-setters and examiners, touched upon in certain papers, the remunerations to be paid to them and the proportion of internal and external examiners, have undergone a considerable change with the responsibility of examining their own students as a part of the teachers' duty, at most of the universities. Moreover, a large number of universities already have trained Controllers of Examinations and even examination reform cells.

Some interesting, though obvious, suggestions are the 'need to have a post-mortem of examination results', 'research in examinations', and 'computerization of

examination work' to meet the numbers (SINGHA. P.35)

The potential of the computer for 'test' construction, 'analysis, design and data processing of examinations', in the context of 'what can be done immediately with the available computer facilities in our country' (P. 76), has been worked out systematically by V. Natarajan. The usefulness of the computer in question banking, with the support of the results of experiments made in India and abroad, has been effectively brought out. The advantages accruing in terms of cost reduction, or at least the cost being competitive with that of traditional methods, have been highlighted.

Natarajan has also thrown a suggestion of the meaningfulness and usefulness of the computer 'in the prevention of student abuses during the taking of tests' (p. 82). Taking stock of all the benefits of the computer, he has made a forceful plea for a 'National Centre for Computer Aided Test Construction,' under UGC/AIU.

V. M. Dandekar's proposal on the system of evaluating results in examinations, already adopted to a certain extent by Gauhati University, makes an interesting reading in the context of the importance to be attached to numerical marks, their conversion to grades and grade point average. A. Edwin Harper Jr. has offered a comprehensive and valid method for adjusting internal assessment to an external standard. The method, involving rank-ordering and scaling, called Rank Order Scaling (mentioned by Amrik Singh also, in 1973) commends itself for its internal conviction as well as its operational simplicity, cost control, and realism.

Some of suggestions made elsewhere, e.g., substitution of the grading system for numerical marks and the need for the introduction of the internal assessment, are already living realities at a number of universities.

Despite certain repetitions and obsolescence of some of the problems, the book can be recommended to all those interested in

the subject for some very constructive and meaningful proposals.

Lastly, a lot of effort seems to have gone into the preparation of a comprehensive Bibliography.

2. Monograph on Question Banking for Universities, AIU, 1976, Price:Rs. 5/-; Pages: 93

The Monograph is a simple, lucid, fairly comprehensive account of the theory, background, usefulness, practicability, and typology of Question Banking. The concept of Question Banks, as implemented at some of the universities, seems to have been completely misunderstood and that by itself justifies the need and desirability of the Monograph.

The first section gives a brief and succinct treatment of the problems and areas dealt with and elaborated later on. Apart from introducing the subject, it serves to generate interest and provide motivation to continue further. The utility of Question Banks in the comparability and maintenance at different levels, with 'a wide national significance' (p. 18), finds a mention here. The rest of the book bears ample testimony to it.

The second section lists briefly some of the outcomes of Question Banks.

The third section deals with the different levels and form of Question Banks, ranging from an individual teacher's collection to the University's collection of items/question from Question Banking Workshops for teachers, item writers, and past examination papers, to be stored on 8" x 5" cards in Kardex trays at the Controller's office and printed as a book for use elsewhere. Card sample has been provided.

The fourth section gives the plan of action to build Question Banks, evolved by the Research Cell of the AIU as a part of its Development. The projects undertaken in some of the subjects at the first degree level have already

(Contd. on page 183)

Plea for Democratization of Higher Education

Dr. S. Chandrasekhar, Vice-Chancellor of Annamalai University, addressed the 14th annual convocation of Punjabi University, Patiala this year. He strongly pleaded for the democratization of higher education in India. The educational system, he said, should assure equality of opportunities to the varied culture, social and economic segments of our society. The democratization of educational opportunities should influence the stratified hierarchical caste system and change the general society into a more democratic and egalitarian one. These two factors are inter-acted and produce in a long run a democratic society with natural and spontaneous democratic opportunities in education at all levels for all classes of people. But the question is how to democratize education in general and higher education in particular. Several objections have been raised in this connection. The excuse of

The second objection is more basic and fundamental. How can we give equal opportunities to all our youngsters of both sexes of all castes and social groups when there is no such equality in the social, economic or cultural life of the community and country at large. Our society has been saddled through the centuries with a tragic stratified social order. The result is that in the country education became the exclusive concern and monopoly of a very few minority, roughly less than 5% of the nation's population. This was bad enough, but on this was imposed an alien system of education. It was not merely an alien system but an equally undemocratic system of education. When Great Britain introduced western education in India, she herself believed in and practised a system of education only for the children gifted and otherwise, of the elite and left the common people largely illiterate

inverted pyramid resting on a thin unstable apex.

There are others who argue that how can one plead for democratization particularly at the time when we badly need excellence. How can we reconcile the desire for equalitarianism on the one hand, with the demand for highest achievement on the other. This is the crux of the problem.

To those who ask how can we reconcile the need for excellence and highest intellectual achievements with the notion of widest possible admissions to our schools and colleges, the answer is very simple. We cannot really achieve excellence unless we give the widest possible, near universal opportunities to youngsters in all spheres of life to obtain an education. If we explore the potentialities of many, we may discover exceptional gifts in a few. If we admit only a few we greatly limit the chances of finding the gifted. In a word, unless we educate many, many people, we may not be able to discover some who are excellent.

Our educational problem no doubt are formidable by their sheer size but this need not deter us because other countries, which are now advanced and in the vanguard of achieving excellence in higher education were in a similar plight only half a century ago. We have their experience and knowledge, their record of errors and trials and we can profit by these as we adapt their experience to our needs, for the successful lessons of human experience are not the monopoly of any one national community.

The United States of America has perhaps the world's oldest system of compulsory universal primary education. They also have a rich and variegated compulsory system of high school education. In the United Kingdom and other older European countries, college and university education was the privilege of a small intellectuals and financially affluent minority. America was the first nation to

Convocations

financial constraints is always readily available for not doing something. Material poverty apparently begets a kind of mental poverty which finds in comforting not to attempt to do anything. The answer is very simple. We need to change priorities and both the Governments and the people should resolve that our people should not be left to grope in illiterate and unlettered darkness and then we shall be able to give it a top priority and find the means for trained teachers, buildings, libraries and laboratories. In Venkateswara University the gold and silver of the temple has been endowed by the people to finance our educational institutions. This could be attempted elsewhere.

and certainly not college-educated. Thus Britain's imposition of a British class system of education on an undemocratic Hindu caste system of education, all but destroyed India's chances of democratizing her educational system. This was a double denial of democratic values in our educational system which has led to two evils. First the denial of knowledge and its very access to a large number of people resulted in a majority remaining steeped in ignorance, poverty and superstition. This had and continues to have its undesirable impact on the rest of the society. Secondly the denial of knowledge and its fruits to a vast majority of our people through the ages has led to Indian society becoming an

make higher education a basic democratic right—open to all men and women who have the minimum academic qualification to enter a university. This right is independent of age, sex, ethnic identity, religion, national origin, financial ability or family background. And yet the United States has produced excellence in many areas of human endeavour, disproportionately large for a relatively small population of only 220 million.

The question often posed here is how can the US treat higher education as a democratic right within the access of all average students and yet produce excellence enough to win half the nobel prizes every year since the termination of the second world war and all the nobel prizes this year. The answer is very simple because she permits a large majority to receive the benefits of higher education, she is able to throw up enough brilliant men and women to achieve excellence by any acceptable international standard.

Should there be a conflict between democratization of higher education on the one hand and the pursuit of excellence on the other? The number of young people and their ratio to the total nation's population entering college or university is higher in the United States than anywhere else in the world. In the State of California, for example, for the first time in history, more than half the young people in the 18-21 age group go to college. As against the British and the European concept of higher education only for a small intellectual or social elite, the United States of America has strengthened the basis of its high schools and democratized the entry of young people to their colleges and universities. Contrary to those who cried that democratization and admission of all high school graduates who desired to enter colleges would lead to a striking and tragic fall in standards in intellectual performance of university young men and

women today in the U. S. vast and well run campuses, large and up-to-date libraries, modern and well appointed laboratories and research centres.

The education experience of USA has been cited because it has been judged by internationally recognised criteria in the midst of the widest possible democratic admissions to their colleges and universities. Some might object that we should not emulate the accomplishments and objectives of such industrially and technologically advanced and affluent countries as Japan, the USA and the Soviet Union. There is no point in comparing ourselves with other under-developed and developing countries because we must set our sights high and the sky should be the limit. If our ambitions and hopes are limited, our achievements are bound to be mediocre. The experience of this one country tells us that in the long run we can achieve both the widest democratic base of admissions to schools and colleges and at the same time achieve excellence, once we adapt their experience to suit our particular needs. We have to shed our prejudice against the 'depressed' castes and tribes, the economically poor, the underprivileged and the dispossessed. Performance without any prop roots of whose son or daughter you are, should determine one's status in society. We do not want traditional aristocracy based on birth and hereditary privilege. We want modern meritocracy based on performance and achievement. The problem before the country is the reconciliation of the claims of ability and merit on the one hand and the needs of social justice on the other. It is easy for any society to choose its ablest and entrust them with tasks of responsibility in administering institutions or governing the nation. Today the one silent social revolution that our country needs is the democratization of educational opportunity for all our young people.

Challenges of agricultural education

The achievement of progressive agriculture is a highly complex operation. We talk of more advanced farm technology these days and are too often satisfied with the magic words 'green revolution'. But many conscious and deliberate policies backed by effective programmes are required to achieve the goal. These acts are interrelated and inter-active one with another and must be carried out simultaneously. Research may provide a high yielding variety—the first step in giving a new technology to farmers. But then we discover that we have to invest in fertilizer, in water, in plant protection materials and methods and in power for irrigation. We discover also that we need an efficient extension system, a complete credit system and price policy which assures a return to farmers without making the urban masses even poorer. Having attended to these matters and with the help of the Almighty we get a good crop. We adopt our institutions to meet the special needs of the small holder and even to take steps in agrarian reform like land consolidation, steps which take time and money. In short the price of success in meeting the malthusian challenge is eternal vigilance in the form of continuing attention to the farmers' needs. It is one thing to devise a strategy. It is quite another to translate strategy into the complex programme in which every part is dependent on every other part for success. We can talk about raising production of foodgrains by four per cent per annum but no result will follow unless we organise the nation's scarce resources for this purpose.

Universities enjoy certain privileges for which they should be held accountable in a special and public way. Their tasks may not be available for inspection of the Auditor-General but the impact of their work have to be scrutinised publicly. On the relevance of universities the ivory towers in a

university may be mentioned. We need our great poets, philosophers and scientists. They may not tell us how best to develop the tube wells but they do remind us of our hopes, reveal nature's secrets and remind us of the infinite possibilities open to man. Not too many of us are Tagores or Einsteins but our life would be immensely poorer without them. A model can be relevant but too many articles and even books are merely mathematically elegant forms of doodling, offering no help to the hard pressed policy maker working for ways and means of ensuring that two blades of grass bearing wheat will grow where one grew before. It is in this area that a university can really be helpful.

The first duty of a university is to provide good teaching. Knowledge has to be imparted as well as vocational skills. Good teaching will arouse interest and train the mind to think analytically as well as become well informed. The interests shown by students will be the greater the more closely the subject matter of their courses relates to the world about them—both their own country and the wider problems of man on this globe.

Despite the fact that equipment is often deficient, universities have a duty to do what research they can. This is the process of adding knowledge and clearly this can be directed to real problems—with great gain to the people among whom the university works. James Perkins, the leading American University President, said 'universities are the dynamics of change as well as transmitters of custom'. Research and ideas are the mainsprings from which must come the modern agricultural technology for India and policies to go with it which are the need of India. One of the major functions of the agricultural universities is to provide the needful research support for agricultural development within the State. This needs to be nurtured further and a good graduate level enrolment is a great help to this end.

The argument that applied research is not intellectually demanding is totally irrelevant. Even if breeding new varieties of rice is not itself basic science but rather a technological application of genetics, the problems of discovering in the field under what conditions a given variety does best is an intellectually challenging problem. The fact that one variety does well in one district and not in another, has to be completely solved if all farmers are to share in the green revolution. The differences in conditions have to be defined and the attempts made to breed appropriate varieties for each set of conditions.

There is a danger in the way academic disciplines have been organised. They can be too compartmental—a Department of Chemistry or Agronomy, Entomology, Agricultural Economics. All are significant but how often do they combine their efforts to solve a problem. Nevertheless it has a sad answer atleast in many universities outside India. Good extension these days demands an understanding of the farm as a whole and its operation over a whole year. Agronomists, Economists, Water Management Specialists have to work together because, finally, farming is a system, in which all specialities are fused.

The problem of seeing things both separately and collectively in a system calls for interdepartmental collaboration in research, a point clearly made by Dr. Sethna. It can also be used as a teaching device. If the continuing seminar is conducted in the field amongst the farmers as well as the classroom it is bound to be helpful. Think of the challenge in a seminar on 'How to raise productivity on small farms.' There is not one discipline in the university—whether in natural or social science or the humanities—they could not usefully be involved. And, if to add further realism, the representatives of credit institutions, input supplying agencies and marketing boards or farms, could sometimes attend, the

challenges and excitement of finding the best answer to the question would be very great.

(Extracts from the convocation address delivered by Sir John Greenfell Crawford, Chancellor of Australian National University, at the Orissa University of Agriculture and Technology)

(Contd. from Page 180)

been completed or are in the process of being completed.

The fifth section, a brief one, suggests the method of storing items/questions, suggesting the computerized system at the highest level of sophistication.

After stating the method of using Question Banks, for purposes of test construction, ranging from class tests to university examinations (section VI), some extremely useful and simple procedures for Pre and Post Validation of Items/Question have been suggested (section VII). The Pre-Validation procedures, offering a check list of criteria, were already mentioned in a more elaborate and illustrated form in 'Towards Better Questions' (AIU). However, the much needed repetition here serves to provide cohesion and continuum to this Monograph.

Some simple statistical procedures for Post-Validation have been proposed, with a handy chart of Facility Value and Discrimination Index of a 20 Items Test of 20 minutes carrying 20 marks, and a 10 Question Test, of 1 hour carrying 50 marks, administered to a class of 44 students.

This step by step review of this Monograph should be able to bring out the kind of awareness and understanding of the system of Question Banking. There is sufficient evidence to predict its success 'over a certain period of time' (section VIII-p.89).

—Satya Pal Julka
Zakir Hussain College, Delhi.

Agricultural universities convention held at Coimbatore

The eighth annual convention of the Indian Agricultural Universities Association was held at the Tamil Nadu Agricultural University, Coimbatore recently. Dr. O. P. Gautam, Deputy Director-General, Indian Council of Agricultural Research, New Delhi, inaugurated the convention and Dr. G. Rangaswami, President of the Association and Vice-Chancellor of Tamil Nadu Agricultural University presided over the function. Eighty delegates from twenty two agricultural universities and Indian Agricultural Research Institute attended the convention. A special session was devoted to the role of agricultural universities in integrated rural development. Three separate sessions on self-improvement of agricultural universities, new courses and curricula in agricultural university and fundamental research in agricultural universities were held.

adequate provision for the proper development of universities. It was recommended that ten or twenty per cent of the provision for agriculture should be set apart for the development of agricultural universities in addition to the maintenance grant provided in the State budget to meet the normal commitments.

There was an urgent need for the training of administrators of the universities and the supporting staff in management. It was felt that the technical degrees awarded by the agricultural universities will also need adjustments in curricula both as regards the subject matter content and duration of the various degrees under the 10+2+3 system of education. There was a general consensus that duration for various degrees imparted in the agricultural universities should be of four years after 10+2 except in the case of agricultural engineering and veterinary and animal sciences which will be five years duration. The internship, apprenticeship, practical training

prepared by the various States so that admissions could be linked with employment potentialities.

Keeping in view the rapid advance in technology and the changed requirement under rapidly changing socio-economic conditions, the need for adding new course like farm forestry, agricultural meteorology, agricultural marketing and cooperation, human nutrition, rural credit, population education, etc. was very keenly felt. It was necessary to make such courses as part of the curricula for various degrees. The Indian Council of Agricultural Research should be apprised of this problem and may be requested to ask the different panels to take this into consideration while suggesting model curricula and outline of courses for various programmes.

Considering the huge manpower requirements of school teachers for vocationalisation of education in agriculture, agromechanics and home science, the agricultural universities should undertake a responsibility to train such teachers. It would be desirable to start a BEd degree in agricultural universities where the right resources or subject matter specialists are available. The award of the second degree would offer an incentive for the students to opt for the teaching profession.

It was felt that time has come when fundamental research has to be given due attention in agricultural universities in the larger interests of agricultural production. But it should be done without hurting applied research which is of primary concern to the agricultural production programme of the country. General universities and the national institutions of the Council of Scientific and Industrial Research and other agencies should be involved in collaborative research programmes with the object of full utilisation of all resources in terms of manpower, money, equipment in those departments where agricultural universities are sufficiently strong.



Delegates at the eighth annual Convention of Indian Agricultural Universities Association held at Coimbatore

The convention felt that there was a need of continuous evaluation of agricultural universities and each university should preferably establish a cell to accomplish this job. The State Governments should be requested to make

and/or earn while you learn should be included in the duration given above.

To meet the unemployment of the agricultural graduates it was recommended that sources and manpower inventories be

Rural varsity inaugurated

The first village university in the country was inaugurated by Smt. Indira Gandhi, former Prime Minister of India at Gandhigram by lightening a silver lamp, unveiling the university's crest and by planting a seedling to mark the occasion. Gandhigram is situated at the foot of Sirumalai hills. It had a humble beginning thirty years ago when it started as medical centre and basic teaching training centre with twenty-five village children. It was given the status of a deemed university only recently by the University Grants Commission.

Speaking on this occasion Mrs. Gandhi said that science had to be taken to the villages and the villagers taken to science. It had been her endeavour to persuade scientists and engineers to use local materials, talent and methods so that men as well as materials were fully utilised. In the beginning the idea of science being taken to village was not accepted but she was glad to find

who could place learning at the disposal of the community at large that could be called learned. These postulates were fully satisfied by this new university. The Vice-Chancellor, Shri G. Ramachandran said that the university was looking forward to the time when every institution in the Gandhigram might come under a chartered university like that of Visva Bharati at Santiniketan. Mr. A. M. Thomas, Chairman of All-India Khadi and Village Industries Commission while opening the exhibition organised on this occasion said that the Commission would adopt this university as an institution for high-level training of its technical scientific and managerial staff and they propose to refer to this university some of their research problems.

JNTU study pattern spreading

While addressing the Institute of Engineers, Andhra Pradesh on 'technological education', Mr. M. V. Rajagopal, Vice-Chancellor, Jawaharlal Nehru Technological

University of Hyderabad, said that the concept of continuous technical education for even postgraduates were acclaimed throughout the country and in fact many other States were emulating it.

He said that technological education should be continuous process and even the employed should be brought back to the university to let them have training and practical knowledge of latest development in science and technology. The external evaluation was out dated and preferred five-year duration for engineering courses. The sandwich courses should also be very necessary and useful. Technical education in India should not merely aim at the academic excellence but also be kept in view of the industrial reforms and the socio-economic needs of the country and try to meet them.

Mr. J. A. Murray, Chief Engineer and Chairman of the Andhra Pradesh Institute of Engineers, proposed a vote of thanks and stated that the Govt. of India had spent over Rs. 102 crores on technical education in the Fourth Plan. The proposed expenditure for the Fifth Plan was Rs. 164 crores while the annual turn out of engineering graduates was about 15,000. The engineering achievements in India were unique and the technical manpower had kept pace with the demand on it.

Master Plan for NEHU campus

The North-Eastern Hill University recently approved the master plan for building its permanent campus, in the vast plot of land measuring 1025 acres near Mawlai at an approximate cost of Rupees twenty crores. The construction work is expected to start soon with the current budget provision of Rupees six crores. The university had appointed a jury of four eminent architects—Shri P. L. Verma, Chief Engineer of Chandigarh, Shri J. R. Bhalla, President, International Association of Architects, Shri H. Rahman, Chief Architect of CPWD and Shri D.V.R. Rao,

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that gradually it was creeping in and people have begun accepting it since it had been realised that resources in this field were unlimited. They are limited only if we do not use them but are something with which we can cooperate without destroying the future. She described Gandhigram as an old institution that was taking a new form. It was based on ideals of Gandhiji—to work amongst the people of rural areas. Dr. P. B. Gajendragadkar, Chancellor of the university in his address laid down three postulates : learning which made citizens out of students of good character and good conduct; learning which liberated the mind of students from narrowness, bitterness, borne out of religion, caste, community or creed; and it was only the man

University, Hyderabad, said that till 1949 the advancement of technological education in the country had been halting and without a perspective. But up to 1970 it made remarkable progress. The dull uniformity both in academic and administrative set up however continued. The starting of the technological university was unique from many points of view. The multi-faculty university with dynamic outlook had introduced internal evaluation system which was most satisfying as borne by the fact that a recent rating by Union Public Service Commission had placed JNTU in the first place in its selection. The University syllabus, its concept of autonomy for the constituent colleges, industrial consultancy service activities analysis cell and a con-

Director, School of Planning and Architecture, New Delhi. The members of the jury along with the Vice-Chancellor, Dr. C.D.S. Devanesen, have finalised the plan out of the seven designs coming from reputed concerns all over the country.

The master plan has provided four phases of the entire complex besides keeping future extension provisions. The four phases will include staff and students housing complex, academic complex, sports complex and restructuring of the existing landscape with provisions for deer park, bird sanctuary and botanical garden.

The entire complex has been designed to be integrated with cluster of two-three storey buildings coming around a pedestrian contact spine. The houses are oriented southwest and northeast so as to give maximum benefit of sun light. The total building complex has been physically integrated with the Contours of the ground so as to be in harmony with the mountainscape. About ten thousand population could be accommodated in the complex when it is completed.

Jodhpur adopts Nandara Kallan village

The University of Jodhpur has developed a plan of integrated rural development for the neighbouring village Nandara Kallan, about 10 km from its campus after conducting various engineering and socio-economic surveys. The village has a Govt. Middle School. There are about 173 students and 8 teachers. It has its own panchayat headquarters covering six adjoining villages in the panchayat. The soil is mixed in nature having different proportions of sand, loan and clay at different places. But on the whole it is fertile. The approximate population of the village is around 1700. Out of this about 200 persons belong to scheduled tribes. The village population as a whole is poor and belongs to weak strata of the society. The social

pattern of the village is based on joint family system. A wage earner has on an average four to five persons to support. The main occupation of the villagers is sawanu cultivation. The cultivators have their own land but they have to seek jobs in the city of Jodhpur during the season. The main crops are Bajra, Gaware, Moth, Til, Moong and Jawar.

It was realised that no development programme could be implemented effectively unless the villagers were properly educated. So in the first instance an adult literacy centre and a centre to educate the women was set up by the university. These Centres are run by the NSS unit of the Faculty of Engineering. A detailed survey of the village was conducted with the help of students and members of the staff and a plan for the construction of cluster of twenty houses has been prepared by the university. The villagers have agreed to transfer the land to the University of Jodhpur and the plan has been approved by the National Buildings Organisation. The construction of houses is to be started soon as soon as the funds are made available by the NBO. In the meanwhile villagers of Nandara Kallan have constructed additional building by 'shramdan' for the village middle school. The university is now helping them in getting the doors and windows fitted in their buildings. The approach road to the crossing of the bed of Jojari river flowing nearby has been constructed through the efforts of the NSS unit of the faculty of engineering of the university. It is proposed to construct a cause way on this non-perennial river. The work would be done through 'shramdan' by villagers and the NSS cadets of the unit. An underground water reservoir is also being planned for storing drinking water for the inhabitants. To infuse confidence in the villagers, the faculty and the officers of the university pay them regular visits. The Vice-Chancellor, Prof. S.C. Goyal, has himself paid several visits and held discussions with

the villagers. They are being taught to adopt a scientific outlook and shun superstitions and orthodoxy. They are now determined to work hard on the transfer of technology programme organised by the university.

Review of educational financing

The committee appointed by Tamil Nadu Government to review the financing of education has revealed that 20% of expenditure on education in the State budget could be easily avoided. It has suggested that the money saved by cutting down expenditure on infructuous expenditure can be utilised for certain social reforms.

One of the areas where economy can be effected is teacher recruitments and here the committee has called for a more rational and restrained policy based on an effective application of teacher-pupil norms. The committee has suggested new programmes for meeting the future growth needs. These include continuous in-service training of teachers, improving the school environments, non-formal education for drop-outs and functional literacy schemes, work experience in schools, vocationalisation of the higher secondary course, taking over the scholarship programme for the poor from the Union Government and operating a small-scale talent and merit scholarship scheme. These reforms required two essential pre-conditions. The performance budget for education must become more of a central instrument that it is at present and it should be drawn up after a detailed review of every plan and non-plan scheme.

The committee has expressed its concern over the declining share of local bodies on primary education and heavy subsidisation by the State Government. It has suggested that the State Govt. share must be reduced and the local bodies be allowed to levy an additional surcharge to meet the expenses. A per capita ceiling on expenditure should be established for the whole State.

Trade unionists to benefit for correspondence courses

A correspondence course in trade union organisation and administration in Tamil would be organised by the Regional Directorate of Workers, Madras for the first time to cover the entire State. The course would be spread over six months and about hundred to hundred fifty active trade union workers will be enrolled for each batch. The course will consist of ten lessons. The Directorate have also introduced a course for taxi and auto-rickshaw drivers in Madras to inculcate safety consciousness and courtesy towards the public. These programmes would be organised with the collaboration of the Deputy Traffic Commissioner of Police.

Apart from these courses, the Madras Directorate plans to conduct three-day camps for rural workers districtwise, worker-teachers get together, and refresher courses, community development in collaboration with the State Council of Educational Research and Training and National Integration Commission for Bus transport workers. The Directorate has since its inauguration in 1960 trained over 1,833 worker-teachers. Besides, 83,400 workers have been trained at the plant level by the worker-teachers. Fifty trade unions in Madras region have availed themselves of the grant-in-aid given by the Central Board of Workers Education to impart training to the members to supplement the activities of the Board. There is also a scheme to help the union to set up their own library on labour matters for giving grants.

Science for common man

Prof. S. Bhagavantam, President, Committee on Science & Technology in Developing Countries, while speaking in a three-day Seminar on technical information services for developing countries held in the IIT, Madras stressed the need to take

immediate steps to bridge the gap between science as it is practised now and the low standard of human life in developing countries. He said that like democracy, development of science and technology had to be by the people, for the people and of the people. Then only it would make a lasting impression. He pointed out that it was a common feature in many developing countries that amidst poverty and ignorance they had advanced scientific institutions. This was totally illogical and something unstable. He said that there was a general feeling that working scientists and educated people in developing countries were getting alienated from rural surroundings, and the problems of the country. It was also felt that urgent steps should be taken to link education in the disciplines of science with national objectives and rules. Methods of information dissemination had to be changed to suit the national tasks and requirements.

Symposium on Venoms and Toxins

An international symposium on 'venoms and toxins' was organised recently at the Haffkine Institute, Bombay. About thirty delegates from India and abroad participated. Prof. T. K. Tope, Vice-Chancellor of Bombay University while inaugurating the symposium said that research in social sciences in developed countries was totally different. In basic sciences this was not so and the research here was of universal value. He said that the University of Bombay would soon introduce a course in tropical medicine.

Lt. Gen. R. S. Hoon, Director-General, Armed Forces Medical Services, in his keynote address said that India alone accounted for half of the total thirty to forty thousand deaths annually from snake bite. He said that the total number of people suffering from snake bite globally was one million a year. About forty thousand died and of this half the number was from India. This was

in spite of the fact that hardly five per cent of the snakes were venomous. There were about three hundred poisonous snakes all over the world and out of them fiftytwo were in India. During the last two decades the identification of components of snake venoms, their structural mode of action and biological effects have been subjected to intensive research. The science of biological uses of venoms though still embryonic, has a vast future for alleviating human suffering.

Ghana commonwealth education conference

The seventh commonwealth education conference is being held in Accra (Ghana). The conference takes place every three years; the first one was held at Oxford in 1959. The Accra meeting has been arranged by the Commonwealth Secretariat in association with the Ghana Government. The theme of the conference is 'the economics of education'. It will consider proposals for the establishment of a regional association of polytechnic directors in Africa and a commonwealth staff college to train teachers for technical training institutions. The delegates are expected to pay special attention to science and technical education and will be looking at measures to encourage local production of low-cost teaching equipment. The first part of the Accra meeting will be devoted to discussions among senior officials who will be examining commonwealth schemes of cooperation such as the commonwealth scholarship and fellowship plan and activities undertaken by the commonwealth secretariat.

Medical Council recognition for three colleges

The Medical Council recently accorded temporary recognition to the University College of Medical Sciences (Delhi), Maharani Laxmibai Medical College (Jhansi) and North Bengal University Medical College (Sushrutnagar, West Bengal). The

recognition of Delhi University Medical College has removed the anomaly created by recognition of the MBBS degree of the university without having been granted recognition to the college. This will now remove the difficulties faced by the graduates of the college, the students passing out from the college could not get the Commission in Army Medical Corps and for post-graduate studies elsewhere. Permanent recognition however would be given to the college only when the deficiencies pointed out by the Medical Council have been rectified.

The Delhi University Medical College will ultimately be shifted to the new hostel complex in Shahdara. A series of meeting with the Delhi Administration, DDA and the Ministry of Health have been arranged for the allotment of proper site adjacent to the mental hospital. The university proposes to build a 500-bed hospital which would provide the much needed medical care to the people of the trans-jamuna area.

Changes in Madurai

Mr. S. V. Chittibabu, Vice-Chancellor of Madurai University has suggested certain amendments to Tamil Nadu Government for changing the university statutes so that good colleges may become autonomous. The university has constituted a committee to consider this question and will soon visit the American College, Fatima College, Lady Doak College, Madura College and Parasakti College. Another committee consisting of faculty members, chairmen of different Boards of Studies and members of the Syndicate has been set up to consider the question of introduction of new pattern of education. The committee would suggest various steps to restructure the courses in the university.

It has also been decided to start from the coming academic year diploma courses in Population Study, Applied Economics, Applied Psychology, Guidance and Counselling, Politics and

Public Administration and Archaeology. Beside these diploma courses the university would also start rural biased courses at the ancilliary level. The University Grants Commission is expected to provide the necessary financial assistance. The university also proposes to establish a Department of Fine Arts which would organise degree course in Dramatics and a certificate course in Bharata Natyam. The Vice-Chancellor has recently urged the State Government to modify the pattern of grants-in-aid and upgrade it so that the management of aided colleges could overcome their financial difficulties.

Swedish aid for AIIMS

The All-India Institute of Medical Sciences will receive equipment worth Rs. 1.56 crores for enhancing its health activities from the Swedish-International Development Agency. The equipment under this grant will strengthen diagnostic services and treatment facilities of the AIIMS hospital. It will also provide support to a large number of departments and will help in reducing the long waiting lines for diagnostic investigations.

The equipment received for the Bio-Statistics department has now made the institute self-sufficient in statistical analyses, a vital component of both patient care and research activities.

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

P. O. I. I. T., POWAI, BOMBAY-400076

Advertisement No. 873/77

Applications are invited for faculty positions in the following Interdisciplinary areas and also in the Civil Engineering and Computer Centre of the Institute.

(1) Professor

Scale of pay : Rs. 1500-60-1800-100-2000-125/2-2500.

Qualifications and Experience :

Good Master's degree/Doctorate degree in the appropriate field with minimum 10 years distinguished experience in teaching/research in an Institution of University standard or Industry. Specialised knowledge, in one or more specified fields. Professional/Scientific work of outstanding merit and experience in guiding research desirable.

(2) Assistant Professor

Scale of pay : Rs. 1200-50-1300-60-1900.

Qualifications and experience :

Good Master's degree/Doctorate degree in the appropriate field. Minimum 5 years experience in teaching/research in an Institution of a University standard or Industry. Specialised knowledge, in one or more specified fields. Experience of carrying out independent research and guiding research desirable.

(3) Lecturer

Scale of pay : Rs. 700-40-1100-50-1600.

Qualifications and Experience :

Good Master's degree in the appropriate field with not less than 2 years Research or Industrial experience. Doctorate degree desirable.

ENVIRONMENTAL SCIENCE AND ENGINEERING

(A) Positions available : Professor, Assistant Professor and Lecturer

FIELD OF SPECIALISATION

Master's/Doctorate degree in Civil Engineering with specialisation in Environmental Engineering with reference to one or more of the following :

- (a) Air Pollution
- (b) Water Pollution
- (c) Water Supply Systems, and
- (d) Engineering Systems of Waste Disposal.

(B) Positions available : Assistant Professor and Lecturer

FIELD OF SPECIALISATION

- (a) Doctorate degree with specialisation in Bio-Chemistry with research experience in the field of proteins and enzymes/food nutrients/metabolic reactions as related to Environmental Science.
- (b) Doctorate degree with specialisation in Microbiology with research experience in the field of Pathogenicity/virology Bacteriology/Mycology/Biological Waste Treatment.
- (c) At least Master's degree in Chemical Engineering with special knowledge of industrial effluents/biochemical engineering.

CIVIL ENGINEERING DEPARTMENT

Positions available : Assistant Professor and Lecturer

FIELD OF SPECIALISATION

- (i) Transportation Engineering—(Traffic Engg./Highway Engg.)
- (ii) Offshore Engineering—(Structural Dynamics/Wave Dynamics - related to offshore structures)
- (iii) Geotechnical Engineering including Soil Dynamics
- (iv) Hydraulic Engineering (Water Resources/Stochastic Hydrology)
- (v) Airphoto Interpretation.

COMPUTER CENTRE

Positions available : Professor, Assistant Professor and Lecturer

FIELDS OF SPECIALISATION in one or more of the following :

- (i) Programming Language Theory, (ii) Design and Analysis of Computing Systems, (iii) Theory of Computation
- (iv) Advanced Computer Applications :

(Artificial, Intelligence, Information - Retrieval, Digital Signal Processing, Simulation and Modelling, Operations Research and Management Systems).

The posts are permanent and carry allowances such as DA, C. C. A., H. R. A. as per rules of the Institute which at present correspond to those admissible to Central Government Employees stationed at Bombay. The Institute has two retirement schemes viz. Contributory Provident Fund-cum Gratuity or General Provident Fund-cum-Pension-cum-Gratuity. Age of retirement is 60 years. Candidates called for interview will be paid second class rail fare from the place of their residence to Bombay and back by the shortest route. Applications should be made on the prescribed form obtainable free of charge from the Registrar of the Institute by sending a self-addressed envelope of 25 cm × 10 cm size. Indian candidates abroad may apply on plain paper (in duplicate). Candidates employed in Government/Semi-Government Organisations or educational Institutions should apply through proper channel. Completed applications should reach the Registrar, I. I. T., P. O. IIT, Powai, Bombay-400076 by 20-4-1977.

India to participate in monsoon experiments

Dr. A. Ramachandran, Secretary in the Department of Science and Technology, inaugurated a six-day international symposium on monsoon in Delhi. The symposium has been sponsored by the American meteorological societies, the Indian Institute of Tropical Meteorology and the Indian Meteorological Department. Dr. Ramachandran said that preparation of a comprehensive data base was necessary for predicting monsoons and hoped that Monsoon-77 experiment and the Monex-79 project would help to build up this base. Monsoon was not only important in India but also in several countries in Southeast Asia. In this context the international monsoon experiments to begin this year and to be repeated in 1979 are ventures in which all countries are equal partners. He said that a single experiment would not answer all questions relating to monsoons and several such projects would be necessary before one could predict the monsoon behaviour.

The Monsoon-77 experiment would begin in June with participation of ships and aircraft belonging to India and the Soviet Union. Several countries would participate in the Monex-79. The Monsoon-77 experiment would cost the country over Rs. 200 million. Dr. Y. P. Rao, Director-General of IMD welcomed the participants which included leading meteorologists of India and sixty-five delegates from seventeen foreign countries.

Hari Om Awards in Surgery

The Hari Om Ashram has donated Rs. two lakhs to the Association of Surgeons, Madras towards yearly awards for outstanding work in the field of surgery. The 1976 award has been given to Dr. Atam Prakash of New Delhi and Dr. (Mrs) Mathangi Ramakrishnan of Madras. The 1975 award was given to Dr. (Mrs) Saroj Gupta of Banaras and Dr. Subir Kumar Chatterji of Calcutta.

Pantnagar's effort to find substitute for wheat

The Kisan Mela of the G. B. Pant University of Agriculture and Technology, was attended this year by a large number of farmers from all over the country. Mr. P. P. Pande, the Vice-Chancellor of the university, said that the mela is being organised twice a year at the end of the Kharif and Rabi crop seasons to bring the farmers of the country face to face with the new varieties of rabi crops, improved breeds of cattle and poultry and new varieties of vegetables and fruits. A question and answer session is held to remove the doubts of the farmers. They are advised on their agricultural problems by the university staff so that the new technology could be applied by the farmers under new field conditions. The farmers could also take with them Pantnagar seeds and mini-kits containing rare seeds of kharif crops. This way the farmers return to their land as ambassadors of new agriculture.

In collaboration with the Hill Development Corporation the university plans to extend its fishery research into a commercial operation. Bhimtal and lakes in the surrounding area will soon be taken up for induced fish breeding, seed production, composite fish culture and a series of other experiments on different aspects of fisheries. The university has already achieved a major breakthrough when a record production of twenty lakh fish seed was supplied to the State Fisheries Department as well as to private fish farmers. The university has recently developed a new grain similar to wheat which is known as 'titricale'. This could give good production in hill and arid areas. It is hybrid of wheat and European rye. According to the preliminary investigations of the university, it can give 20 to 30% more production than wheat.

IARI organises Vigyan Mela

A three-day Krishi Vigyan

Mela was organised by the Indian Agricultural Research Institute, New Delhi. Mr. B. D. Jatti, the Acting President of India, in his address said that the majority of the farmers in the entire country were still unaware about the latest production technology and the agricultural scientists and extension workers owed a special responsibility for spreading the new development in farming to far off places. He appreciated the good progress in the agricultural field which resulted in a record production of 118 million tonnes of grains this year. All credit for this goes to the work of the agricultural scientists.

The Krishi Vigyan Mela was attended by over 15,000 farmers and students from different parts of the country. Various new crops, vegetable varieties, model rural houses, small farm machinery, improved production technology, use of solar energy for drying paddy and bio-gas for cooking were displayed. The main theme of the Mela has been 'agriculture in integrated rural development'.

Autonomous status for Presidency College

The Calcutta University is negotiating with the West Bengal Government for converting the Presidency College into an autonomous institution. The University Grants Commission had decided some time back to confer autonomous status on eight premier colleges in the country. The Calcutta University of which the Presidency College is a constituent has sent a team of observers to assess the capacity of the college in terms of space, resources and teaching staff required to teach different disciplines and conduct examinations at both undergraduate and postgraduate levels. Many changes have been effected since the visit of the team and it is now hoped that the college would be given autonomous status.

Andhra honours Tope

The Andhra University conferred the honorary degree of Doctor of Laws on Professor T. K. Tope, Vice-Chancellor, University of Bombay, for his work in the field of constitutional and Hindu law. Professor Tope has been a member of the Law Commission set up by the Government of India and also of Law Commission appointed by the Government of Maharashtra. He has been the President of the Samajik Samanta Parishad and is connected with a number of educational and social science institutions. He has developed a national social service scheme with missionary zeal in the University of Bombay.

The honorary Doctorate in Literature was also conferred on Mr. S. Rau, Director, IAS Study Circle, New Delhi, Mr. H. G. V. Reddy, Consultant, Commodities Division, United Nations Conference of Trade and Development, Mr. K. V. Gopalswamy, President, A. P. Sangeetha Natka Akademi and Mrs. K. Lakshmi Raghuramaiah, President, All-India Women's Conference, New Delhi.

B. C. Roy Awards

Dr. B. C. Roy national awards for 1976 were announced recently. The award consists of Rs. 5,000 in cash and a medal. The recipients are : Dr. A. C. Das (KG Medical College, Lucknow), Dr. Indrajit Dewan (PG Institute of Medical Education & Research, Chandigarh), Dr. S. Ramachandra Rao (Gandhi Medical College, Hyderabad), Dr. G. S. Sainani (B. J. Medical College), Pune, Dr. T. Manickam (Bangalore Medical College), Dr. P. R. Trivedi (Ahmedabad), Dr. J. M. Pahwa (Gandhi Eye Hospital, Aligarh). The oration award goes to Lt. Gen. R. S. Hoon, Director-General of Armed Forces Medical Service, New Delhi.

UGC help for Delhi colleges

The University Grants Commission will assist Hastinapur College, Bhagat Singh College, Maitreyi College, Satyawati College, Swami Shradanand College, College of Vocational Studies, Dr. Zakir Husain College, Mata Sundari College for Women, the Institute of Home Economics and the Deshbahdhu College in the construction of their building programmes. The University of Delhi had pleaded strongly with the commission to provide adequate funds so that these colleges which are presently housed in school buildings or in rented premises will have their own buildings during the Fifth Plan period.

With the exception of Deshbahdhu College, all the colleges will be shifted to new premises for which land has already been acquired. The special long term allocations of the building fund for Deshbahdhu College will be phased. The library block would be constructed in the first phase. The other buildings would be constructed in the subsequent phases.

New faculties for Bombay

The Academic Council of Bombay University has proposed to the Senate to trifurcate the existing faculty of technology into three parts, viz., technology, pharmaceutical sciences and engineering and architecture. The University would thus have eleven faculties.

The university accepted recently endowments worth Rs. three lakhs from Dr. G. P. Kane Trust, Bombay, to institute gold medal, prizes, visiting professorship and research fund in the memory of Dr. Kane in the sphere of chemical technology.

Another donation of Rs. 15,000 was received from Peter Alvares Memorial Committee to institute a scholarship and bronze medal after Mr. Peter Alvares in the degree of Master of Labour Welfare and Industrial Relations.

Renewed efforts for the improvement of sports standards

Gujarat, Himachal Pradesh, Karantaka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Delhi, Goa, Daman and Diu have provided incentives to their outstanding sportsmen & sportswomen in the form of State awards. All States have set up Sports Councils except in Haryana where its functions are looked after by the State Director of Sports. Uttar Pradesh and Tamil Nadu have enacted legislation for the preservation of the playfields in urban and rural areas, while Nagaland, Bihar and Rajasthan are considering enacting such a legislation. Assam, Haryana Kerala and Manipur have made arrangements to provide available open spaces for playfields.

Physical education, games and sports have been made compulsory at the school stage in Bihar Punjab, Orissa, Tamil Nadu and Tripura while in Haryana it will be Compulsory from the next academic session. Andhra Pradesh, Gujarat, Manipur, Meghalaya, Uttar Pradesh and West Bengal

are actively considering similar proposals. In Delhi Physical education has been included in the curriculum for IX and Xth classes under the new pattern of education. Physical education, games and sports are compulsory subjects of study in the curriculum drawn up by the National Council of Educational Research and Training for the 10 years school system.

Panjab varsity reservations for weaker sections

Panjab University has decided to reserve fifteen per cent of the posts of lecturers in its teaching departments and affiliated colleges for the scheduled castes and two per cent for scheduled tribes. Of the non-teaching posts, twenty per cent will be reserved for the scheduled castes and two per cent for the scheduled tribes. The university syndicate has adopted a resolution accordingly and has authorised the Vice-Chancellor to constitute a committee to look into the granting of exemption to medical colleges regarding reservation of seats for the scheduled castes and scheduled tribes as proposed by the University Grants Commission.

INDIAN SCHOOL OF MINES

DHANBAD-826004

Advertisement No. 615003/56/77

Dated March 1, 1977.

CORRIGENDUM No. 1

Entrance Examination (1977) for admission to three-year B. Tech degree programme in (i) Mining Engineering and (ii) Mining Machinery.

In modification of our previous advertisement No. 615003/76 dated December 20, 1976, it is hereby notified that the last date for receipt of prescribed application form for the above examination has been extended upto April 15, 1977.

The dates for the examination, the examination centres and the other conditions will remain same.

CORRIGENDUM No. 2

Competitive Examination for direct admission in 3rd year Applied Geophysics course.

In modification of our previous advertisement No. 615056/77 dated January 31, 1977, it is hereby notified that the competitive examination for admission to the 3rd year of the 5 year programme will be held on Friday the 27th May and Saturday the 28th May, 1977 and NOT on 13th and 14th May, 1977.

M. S. Ramamurthy
REGISTRAR

A List of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Aslam, Bilquees. Theory and applications of absolute summability methods. University of Jabalpur.
2. Bandyopadhyay, Manjiri. Some problems in hydrodynamic stability including the effects of coriolis force, self gravitation, gravitational attraction or dynamic stabilization. University of Bombay.
3. Gopal, Asgekar Gajanan. On self-gravitating magnetofluids. Shivaji University.
4. Grewal, Beant Singh. Investigations in the theory of ballistics. University of Delhi.
5. Gupta, Sat Narain. A study of block-wise error correcting and protecting burst codes. University of Delhi.
6. Madan Prasad Singh. On infinite matrices and their applications to some results of Mathematical analysis. University of Bihar.
7. Parihar, R.S. Contributions to physiological fluid dynamics I.I.T., Kanpur.
8. Ramanathan, A. Stable principal bundles on a compact Riemann surface. University of Bombay
9. Singhal, Bal Krishan. A study of generalized hypergeometric functions. Jiwaji University.
10. Srinivasan, S. Some diophantine approximation problems in classical number theory. University of Bombay.
11. Suman Rekha. A study of some polynomial sets. University of Delhi.
12. Yadav, Virendra Singh. Absolute summability. Vikram University.

Statistics

1. Aggarwal, Manohar Lal. Some distribution problems in the theory of record statistics. University of Delhi.
2. Arora, Jagat Ram. Mathematical analysis of some reliability models. University of Delhi.
3. Arora, Savita. Optimization problems in mathematical programming. University of Delhi.
4. Joshi, S.M. Distribution-free slippage tests for location parameter in K-samples and some problems in estimation of the location parameter with known coefficient of the variation. University of Bombay.
5. Mudur, S.P. A formal approach to the design of microprogram controlled computers. University of Bombay.
6. Rajagopalan, M. A study on genetic variation in arbitrary populations. University of Delhi.
7. Verma, Shibbu Singh. Statistical models for some physiological problems. University of Delhi.

Physics

1. Banerjee, Swapna. Some aspects of excited states of hypernuclei and the alpha particle model. University of Delhi.
2. Borgohain, Pabitra. On some dense massive sphere in general relativity. University of Gauhati.
3. Bukharia, Arun Prakash. Thermo and photo-electret effect in organic molecular solids with special reference to acenaphthene. University of Saugar.
4. Buloka Reddy, Satti. Internal conversion studies of some high multipole transitions. Andhra University.

5. Chakrabarti, Krishnagopal. New aspects of several elementary excitations in solids. University of Calcutta.

6. Chaudhury, Subhadra. Studies on some properties of metals and alloys. University of Calcutta.

7. Chhajlani, Rajinder Kumar. The wave propagation and instability of collisionless plasma in the presence of strong magnetic field. Vikram University.

8. Das, P.K. Investigations of compact massive objects with large central redshifts. University of Bombay.

9. Datta, Amitava. Some applications of gauge field theories. Visva-Bharati.

10. Dey, Tapas Kumar. Heat conduction in bismuth-antimony and bismuth-thallium systems at liquid helium temperatures and above. University of Delhi.

11. Gangakhedkar, N. S. Spectroscopic studies of a few substituted and heteroatomic molecules, their crystals and mixed crystals doped by them. University of Bombay.

12. Garg, Suresh Chand. Space and angle-dependent steady-state thermal neutron spectra in coherent and incoherent moderators. University of Delhi.

13. Ghosh, Chunilal. Studies on multialkali photocathodes and their application in an imaging device. University of Bombay.

14. Kundra, K.D. X-ray study of thermal expansion and phase transformation in some semiconductor chalcogenide materials. University of Delhi.

15. Madhu Prasad. A study of hysteresis in Clarke Solder Blob junctions. University of Delhi.

16. Mukhopadhyaya, Anup Kumar. Spectroscopic investigation of the crystalline field energy states of some rare-earth complexes. University of Calcutta.

17. Navalgund, R.R. Electron paramagnetic resonance studies in some ferroelectric crystals. University of Bombay.

18. Paliwal, S.S. Decay thermoluminescence and emission studies of SrS-HF-Phosphors. Bhopal University.

19. Patel, S.B. High resolution electron and gamma ray spectroscopic studies of some deformed nuclei. University of Bombay.

20. Raychaudhuri, Prabhas. Neutrino emission and its astrophysical implications. D.Sc. University of Calcutta.

21. Sharma, D.P.P. Mechanical and optical studies of materials. University of Jabalpur.

22. Shah, Rameshchandra Thakorlal. Microtopography and related study of crystal surfaces by high resolution techniques. M.S. University of Baroda.

23. Sharma, Vijender. Small and large signal impedance measurements and transverse instability effects in impatt diodes. University of Delhi.

24. Tandon, Ram Pal. Electrical behaviour of semiconducting transition metal oxide phosphate glasses. University of Delhi.

25. Venkatachari, R. Collision frequency and temperature in the F-region of the ionosphere. Andhra University.

Chemistry

1. Agrawal, Dadu Ram. Studies on N-arylhydroxamic acids and their metal chelates. Ravishankar University.

2. Agarwal, Jagdish Saran. Studies on the composition, structure and formation of urinary calculi. University of Delhi.

3. Ahuja, Virendra Kumar. Molecular orbital (MO) study of α -pyrone and γ -pyrone derivatives. University of Delhi.
 4. Aiai Kumar Singh. Analytical applications of substituted pyrimidines. University of Delhi.
 5. Ambulkar, Ramesh Sadashivrao. Stability constants and thermodynamic functions of some gallium (III) complexes. Nagpur University.
 6. Bajpai, Uday Diwakar Nath. Studies on addition polymerization. University of Jabalpur.
 7. Barnela, S.B. Heterocyclic studies. University of Bombay.
 8. Chetty, K. Venugopal. A study in heterogeneous equilibria: Surface areas of sulphides. Sri Venkateswara University.
 9. Datar, A.G. Gas chromatographic studies. University of Bombay.
 10. Devendra Kumar. Synthetic studies in coumarins. University of Delhi.
 11. Durlabh Kumar. Two new flavono-lignans from *Hydnocarpus weightiana* and Syntheses of some naturally occurring dimers. University of Delhi.
 12. Gaikwad, M.S. Structural studies of metal-complexes of ethyl α -isonitrosoacetoacetate (Heina). University of Bombay.
 13. Ganguly, Prabuddha. Magnetic and spectroscopic studies on ferric dithiocarbamates. University of Bombay.
 14. Gautam, Narainder Kumar. Studies on some new titrimetric methods for thiocarbonate-sulphur determination and micro-analytical evaluation of metal ions. University of Delhi.
 15. George, Kurian V. Studies on liquid crystalline properties of cholesteric and nematic esters. M.S. University of Baroda.
 16. Fernandes, Anand Ganesh. Kinetics and mechanism of oxidation of some pentoses by quinquivalent vanadium. Jiwaji University.
 17. Hanumanthu, P. Studies in the formation of heterocyclics: Condensation of diamines, o-aminobenzemides and naphthols with Schiff bases. Osmania University.
 18. Jolly, Shashi. Studies on the Kinetics of lignin (unreacted and dichromate reacted) formaldehyde reaction from lignin isolated from *Pinus roxburghii*. Meerut University.
 19. Kamath, Vinayak B. Sorption studies of benzoic acids with ion exchange resins. M. S. University of Baroda.
 20. Mansharamani, D. C. Anthrone and their derivatives. University of Bombay.
 21. Mukhopadhyay, Samarendra. Synthesis of heterocyclic compounds of possible analgetic activity. University of Calcutta.
 22. Nandi, Murarimohan. Studies on chelates and chelating agents containing sulphonamido group. University of Calcutta.
 23. Natarajan, K. Studies on triphenylphosphine and triphenylarsine complexes of ruthenium (III) and ruthenium (II). I. I. T., Kanpur.
 24. Pariasamy, N. Studies on electrochemiluminescence. University of Bombay.
 25. Patwa, B.S. Studies on sulphones. Saurashtra University.
 26. Pujari, Panchanan. Physico-chemical studies on imidazole complexes of cobalt (II) and nickel (II). Utkal University.
 27. Rajaraman, R. Studies in the synthesis of protoberine alkaloids. University of Madras.
 28. Rajeswari, S. Studies in alkaloids. University of Madras.
 29. Ramana, Karri Venkata. Some studies on oxalato complexes and reduction of trivalent thallium. Andhra University.
 30. Rama Rao, K. Synthesis of nitrogen heterocycles of potential pharmacological interest viz. pyridazine derivatives. Osmania University.
 31. Ramaswamy, P. Studies in extraction polarography: Resacetophenone oxime as chelating agent in the determination of first transition metals. Sri Venkateswara University.
 32. Ray, Hrishikeshchandra. Studies on Indian clays. D.Sc. University of Calcutta.
 33. Roy, S. D. Studies on some 12-molybdophosphates: A group of inorganic ion exchange. University of Bombay.
 34. Sarkar, Alok. Phytochemical studies on Indian plants. University of Calcutta.
 35. Saxena, Shashi. Metal chelates of some nitrogen containing ligands and their micro-analytical applications. University of Delhi.
 36. Sen, Kali Das. Hartree Fock Slater wave functions and Sternheimer shielding antishielding factors in atoms and ions. I. I. T. Kanpur.
 37. Sengupta, Sukanta. Mechanism of reactions of some transition metal complexes: Ligand substitution reactions of some nickel (II) complexes. University of Calcutta.
 38. Sharma, Arabinda. Studies on heterocyclics. Sambalpur University.
 39. Srivastava, Rajmohan Rai. Physico chemical studies of vegetable oils. Vikram University.
 40. Singaram, Bakthan. Studies in terpenoids: Investigations into the chemistry of certain terpene nitroschloride hydrosulphide nitrosite, B-naphthol and maleic anhydride. University of Madras.
 41. Thakarda, Atmaram. Study on petroleum waxes. Sardar Patel University.
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 2. Haldar, Dhanpati. Petrology of the ultramafic rocks with special reference to the origin of chromitite around Nausahi, Keonjhar District, Orissa, India. University of Calcutta.
 3. Mohabey, Nawalkishore. Structural and petrological studies of mafic and associated rocks northwest of Bhandara. Nagpur University.
 4. Sawarkar, Anna Rajramji. Re-evaluation of geology and stratigraphy of the cretaceous tertiary sequence of Pondicherry State and adjoining parts of South Arcot District, Tamil Nadu, with special reference to their economic deposits. Nagpur University.
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1. Agrawal, Damodar Prasad. Studies on shaped fuel from non caking coal-char fines. Nagpur University.
 2. Anand Kumar. Analysis and calculation of internal separated flow at large Reynolds number. I.I.T., Kanpur.
 3. Balasubramanian, R. Accurate evaluation of transients on double circuit BHV transmission lines. I.I.T., Kanpur.
 4. Bansal, R. K. Estimation of stability domains for the transient stability investigation of power systems. I. I. T., Kanpur.

5. Chandrasekhararn, K. Kinetics of heterogeneous reactions. University of Bombay.
6. Garg, A. C. Some crack and punch problems in the mathematical theory of elasticity. I. I. T. Bombay.
7. Gupta, V. K. Studies in optimal design of nonhomogeneous columns and beams. I.I.T., Kanpur.
8. John, U. Lazar. Development and evaluation of flocculating algalbacterial system for waste water treatment. I.I.T. Kanpur.
9. Kane, V. G. On the binding number of a graph. I.I.T. Kanpur.
10. Karmakar, S.R. Studies in swelling. University of Bombay.
11. Khanapuri. B. C. Investigation of the effect of organometallic additives on the combustion of liquid fuels. I. I. T. Bombay.
12. M. Prasad. Pressure, volume, temperature relationships of refrigerant 500 gas. I. I. T., Kanpur.
13. Mowade, Chandrkant Yeshavantrao. The study design,

construction and performance of the transistorised distance relay. Nagpur University.

14. Nanjappa, G. Simulation of hydrology of ground water systems in low rainfall areas: Modelling of preponding phase of infiltration under constant. I.I.T. Bombay.
15. Pritam Singh. Development of furan chemicals. University of Bombay.
16. Sadri, K.H. Synthesis of some heterocyclic compounds. University of Bombay.
17. Salvi, A.S. Studies in natural and synthetic fibres. University of Bombay.
18. Srivastava, K. G. Studies in the chemical modification of cashewnut shell liquid. University of Bombay.
19. Subramaniyan, V. Local mass transfer rates in batch fluidized beds. University of Madras.
20. Sundara Raman, P. New approaches to the synthesis of drug intermediates. University of Bombay.
21. Tare, J. P. Separation of close boiling organic compounds by adductive crystallization. University of Bombay.

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CLASSIFIED ADVERTISEMENTS

INDIAN INSTITUTE OF TECHNOLOGY KANPUR

Advertisement No. 3/77 (Phase-II) :

Applications are invited for the following positions for the Departments/Sections/Centres / Programmes / Laboratories in this Institute :

iv) Technical Assistant :

B.Sc.

OR

Diploma in specified branch of study + 5 years' experience in Lab./Workshop.

Certificate + 5 years' relevant experience

2. Ability to manufacture, construct and erect from working drawings and ability to make simple dimensioned sketches.
3. Ability to work within prescribed tolerances.
4. Knowledge of Hindi and Blue Printing reading.

viii) Senior Laboratory Assistant :

High School (Sc.) + ITI Certificate + 5 years' relevant experience

OR

Diploma in Engineering

OR

B.Sc.

ix) Draftsman Grade II :

High School + ITI Certificate in Draftsmanship + 5 years' experience.

DESIRABLE :

Ability to produce finished drawings independently from rough sketches.

Section II :—DESIRABLE :

a) Electron Microscope Laboratory :

(i) Technical Officer (Foreman Selection Grade) :

Experience in handling Vacuum devices and Solid State Circuits. Preference will be given to applicants with previous working experience in electron microscope or X-ray Laboratories.

ii) Senior Technical Assistant (in case none of the candidates is found suitable for Senior Technical Assistant, offer will be made on the post of Technical Assistant).

(1) Experience with solid state electronic equipment, (2) Experience with vacuum systems, (3) General laboratory experience of five years.

(b) Telephone Exchange :

Technical Officer (Foreman Selection Grade) :

Experience in installing, maintenance of MAX. Experience in outdoor cable work. Preference will be given to applicants who have spent considerable time in supervisory capacity in addition to being overall incharge for technical work in connection with telephone system consisting of PBX, PABX and multiple exchanges.

Name and scale of the post	No. of posts	Allotment of posts
i) Technical Officer (Foreman Selection Grade) Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200.	3	1 Electron Microscope Lab. 1 Telephone Exchange 1 Motor transport Unit
ii) Senior Technical Assistant Rs. 550-25-750-EB-30-900.	5	1 Electron Microscope Lab. 1 Graphic Arts Section 1 Chemistry Department 2 Civil Engineering Deptt.
iii) Physical Training Instructor Gr. I Rs. 550-25-750-EB-30-900.	3	3 Physical Training & Games
iv) Technical Assistant Rs. 425-15-500-EB-15-560-20-700.	3	2 Civil Engineering Deptt. 1 Van do Graaff Laboratory
v) Assistant Security Officer Rs. 425-15-500-EB-15-560-20-700.	1	1 Security Unit
vi) Mechanic Grade 'A' Rs. 380-12-500-EB-15-560	5	1 Chemistry Department 1 Civil Engg. Department 1 Central Glass Blowing 2 Refrigeration Unit
vii) Mechanic Grade 'B' Rs. 330-8-370-10-400-EB-10-480.		
viii) Senior Laboratory Assistant Rs. 380-12-500-EB-15-560.	3	1 Chemistry Department 2 Civil Engg. Department
ix) Draftsman Grade II Rs. 330-10-380-EB-12-500-EB-15-560.	1	1 Electrical Engineering Deptt.

QUALIFICATIONS AND EXPERIENCE :

SECTION - I ESSENTIAL :

i) Technical Officer (Foreman Selection Grade) :

Degree in Engineering

OR

M.Sc. + 10 years' experience

OR

Diploma in Engineering + 15 years' experience.

ii) Senior Technical Assistant :

M.Sc.

OR

Diploma in specified branch of study + 10 years' experience in Lab./Workshop.

iii) Physical Training Instructor Gr. I :

Graduate with Diploma in Physical Education and NIS coaching certificate plus six years' experience as Physical Training Instructor in a Govt. recognised Institution.

v) Assistant Security Officer :

Graduate + 6 years' experience of Security Supervision in a Govt. recognised organisation.

OR

Released personnel from Defence Services of the rank not below Senior J.C.O. or of equivalent rank from Police or Industrial Security Force.

vi) Mechanic Grade 'A' :

1. High School + Diploma in Engineering

OR

High School + ITI Trade Certificate + 10 years' experience

2. Ability to manufacture, construct and erect from working drawings and ability to make simple dimensioned sketches.

3. Ability to work within prescribed tolerances.

4. Knowledge of Hindi and Blue Printing reading.

vii) Mechanic Grade 'B' :

1. High School + ITI Trade

(c) Graphic Arts Section :

Senior Technical Assistant :

Knowledge of commercial photography and darkroom processing with atleast five years working experience in this trade also.

(d) Chemistry Department :

(i) Senior Technical Assistant :

Experience in coordinating and organising technical work pertaining to setting up and operation of laboratories/experience in fabrication, repair and maintenance of mechanical equipment used in laboratories/experience in fabrication, repair and maintenance of electrical and electronic equipment used in Laboratories. Preference for those working in Chemistry/Chemical Engineering Laboratory may be given.

(ii) Senior Laboratory Assistant :

Experience in preparation and other works in large teaching/research laboratories.

(iii) Mechanic Grade 'B' :

Experience in carpentry work pertaining to laboratories with capabilities of fabrication of teaching aids and models.

(e) Civil Engineering Department :

(i) Senior Technical Assistant :

Experience in any one or more of the Civil Engineering Lab./Workshop/operation and maintenance of equipment.

(ii) Technical Assistant :

Experience in any one or more of the Civil Engineering Laboratories and skill in various machine operation, maintenance and repair of equipment and design and drawing in Civil Engineering.

(iii) Senior Laboratory Assistant:

Experience in assisting in setting up laboratories experiments etc. for laboratory classes and research activity in any one or more of the Civil Engineering Laboratories.

(iv) Mechanic Grade 'A'/'B' :

General Mechanic having skill in machine operations, welding and capable of repairing and maintaining equipments.

(f) Physical Training & Games :

Physical Training Instructor Grade I :

Preference will be given to

sportsmen of national repute who have represented India or State.

(g) Electrical Engineering :

Draftsman Grade II :

Ability to prepare circuit diagrams of electronic circuits.

(h) Central Glass Blowing :

Mechanic Grade 'B' :

Experience in glass blowing, repair and maintenance of associated equipment.

(i) Refrigeration Unit :

(i) Mechanic Grade 'B'-1 :

Experience in detecting and rectifying faults of all sorts of Domestic Cooling Units such as Air-conditioners, Water-Coolers, Refrigerators etc. and knowledge of electrical wiring of cooling units.

(ii) Mechanic Grade 'B' (Winder)—1 :

Knowledge of winding of Air-conditioner, Water Cooler, Refrigerator Fan motors and compressors.

(j) Motor Transport Unit :

Technical Officer (Foreman Selection Grade)

(i) Atleast 5 years of the indicated experience should be in automobile fleet operation on a fleet of not less than 20 vehicles. Out of this atleast two years should have been as fleet in-charge responsible for scheduling, maintenance spare parts inventory control, duty allocation etc.

(ii) Should have practical knowledge regarding the maintenance of petrol and diesel vehicles.

(iii) Candidates not have the above indicated experience need not apply.

(k) Van de Graaff Laboratory :

Technical Assistant :

Experience in nuclear instrumentation OR Experience with nuclear accelerator and its auxillary systems, such as vacuum pumps, gas driving system, compressors etc.

NB :—(1) Two posts of Technical Officer (Foreman Selection Grade)/Senior Technical

Assistant/Physical Training Instructor Grade I and three posts of Technical Assistant/Assistant Security Officer/Mechanics/Senior Laboratory Assistant/Draftsman Grade II are reserved for candidates belonging to Scheduled Castes/Scheduled Tribes.

2) Qualifications may be relaxed by the Selection Committee in case of very good experience and record.

3) Experience may be relaxed by the Selection Committee in case of candidates possessing higher qualifications and excellent records.

4) Selection Committee can recommend appointments to lower position if necessary.

Posts are permanent and carry retirement benefits in the form of CPF Scheme or CPF-cum-Gratuity Scheme or GPF-cum-Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to Central Government employees stationed at Kanpur. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route. All applicants from Govt./Quasi-Govt. organisations, public undertakings should forward their applications through proper channel.

Applications for Technical Officer (Foreman Selection Grade)/Senior Technical Assistant/Technical Assistant/Physical Training Instructor Gr. I/Assistant Security Officer posts should be made on the prescribed forms obtainable free of charge from the Registrar of the Institute by sending a self-addressed unstamped envelope of 25 cm x 10 cm size accompanied by an Indian Postal Order of Rs. 7.50 (Rs. 1.87 for Scheduled Castes/Scheduled Tribes candidates) and for the posts of Senior Laboratory Assistant/Mechanic Grade 'A'/'B'/Draftsman Grade II should be made on plain paper, stating qualifications, experience, pay and present scale of the post now held and other particulars and accompanied by an Indian postal order for Rs. 3/- (0.75 paise for Scheduled Caste/Scheduled Tribe candidates) in the name of Registrar, Indian Institute of Technology, Kanpur should reach the Registrar, Indian Institute of Technology, Kanpur-208016 on or before April 15, 1977.

Advertisement

SHIVAJI UNIVERSITY, KOLHAPUR.

(Maharashtra State)

Applications are invited for the following posts :

1. **CHEMISTRY** : One Professor (Sugar Chemistry or Chemical Technology). One Lecturer (Sugar Chemistry) Persons with Organic Spectroscopy will be given preference.

2. **ZOOLOGY** : One Professor (Cell Biology).

3. **PHYSICS** : Three Professors :—

(i) Solid State Physics (Experimental Semiconductors)
(ii) Material Science/Electronics and Microwave or Theoretical Physics (iii) Open for other specialisations

4. **MATHEMATICS** : One Professor (Pure Mathematics)

5. **GEOGRAPHY** : One Professor.

6. **SOCIOLOGY** : One Professor. One Lecturer.

7. **POLITICS** : One Professor.

8. **HISTORY** : One Reader (Ancient Indian History or North Indian History). One Lecturer.

9. **ECONOMICS** : One Professor (Econometrics/Mathematical Economics). One Reader Transport Economics/Industrial Economics/Agricultural Economics).

10. **ENGLISH** : One Reader.

PAY SCALES :—

(i) Professor: Rs. 1100-50-1300-60-1600. ii) Reader: 700-50-1250. iii) Lecturer : 400-40-800-50-950. These scales are likely to be revised.

QUALIFICATIONS AND EXPERIENCE :

1. **PROFESSOR** : a) First or Second Class Master's Degree and Doctorate Degree in the subject of a Statutory Indian or Foreign University of repute. b) Teaching Post-Graduate classes for about ten years and guiding successfully some Ph. D. Students. Published research work of merit will receive due consideration.

Note : Some of the conditions may be relaxed in the case of exceptionally capable candidates.

2. **READER** : a) A Doctorate Degree of any recognised University Indian or Foreign with at least second class either at Bachelor's or Master's Degree and published independent research work. b) Seven year's experience of teaching Post Graduate Classes.

Note : Some of the conditions may be relaxed in the case of exceptionally capable candidates.

3. **LECTURER** : a) A First or Second Class Master's Degree OR a) A Doctorate degree with at least Second Class Bachelor's Degree. OR a) Any other equivalent Degree or Degrees of an Indian or Foreign University. AND b) Five year's experience of teaching Graduate Classes at the Special or Principal level or at Post Graduate level. (Ph. D. with M. A./M. Sc. II

Class will be considered as teaching experience). c) Preference will be given to candidates belonging to Scheduled Castes, and Scheduled Tribes.

Prescribed application forms (seven copies) can be had from the University Office. Desiring candidates are requested to send Indian Postal Order of Rs. 3.50 alongwith self addressed envelope with a postage of 00-70 ps.

Seven copies of applications alongwith necessary enclosures should reach the Registrar, Shivaji University, Vidyanagar, Kolhapur-416004, on or before **25th April, 1977.**

Kolhapur

Date : 21. 3. 1977

Usha Ithape

REGISTRAR

GUJARAT AGRICULTURAL UNIVERSITY

Ahmedabad-380004

Advt. No. 3/77

Applications in prescribed forms (available on working days between 11.00 a.m. to 2.00 p.m. from the Registrar. Gujarat Agricultural University, Shahibag, Ahmedabad-380004 on cash payment of 0.50 paise or by sending crossed Indian Postal Order of equal amount issued in favour of Comptroller, Gujarat Agricultural University, Ahmedabad alongwith self addressed envelope affixed with 0.50 paise postage stamps) are invited for the following posts:—

Sr. No.	Designation of the post	Pay scale
1.	Training Organizer	Rs. 1100-50-1300-60-1600
2.	Training Associate (Crop production)	Rs. 700-50-1250
3.	Training Associate (Home Science)	—do—
4.	Training Associate (Forage Crop)	—do—
5.	Training Associate (Dairy)	—do—
6.	Training Associate (Plant protection)	—do—
7.	Training Associate (Soil & Water Management)	—do—
8.	Training Assistant (Ani. Production)	Rs. 500-25-950
9.	Training Assistant (Farm Engineering)	—do—
10.	Training Assistant (Crop Production)	—do—
11.	Training Assistant (Home Science)	—do—
12.	Training Assistant (Audio Visual Aid)	—do—

The candidates for the post of Training Organizer should possess at least Master's degree and the candidate for the post of Training Associate/Training Assistant should possess at least Second Class Bachelor's degree in the concerned field.

Other details about experience etc. will be supplied alongwith the application form. University employees may obtain the details by request on plain paper.

Applications complete in all respect should reach the Registrar, Gujarat Agricultural University, Ahmedabad on or before **15-4-77.**

**Ahmedabad,
Dt. 9-3-1977**

Sd/-
**I. C. Patel
REGISTRAR**

LUCKNOW UNIVERSITY

Corrigendum to Advertisement No. 2/1977

1. As already notified all the teaching posts advertised in Advertisement No. 2/1977 have been sanctioned under the Fifth Five Year Plan and hence they are initially on a temporary basis.

2. The posts of Professor of Hindi at serial No. 6 and Lecturer in Mathematics at serial No. 33 in the aforesaid advertisement are deleted.

sd/-
Kaushal Kishore
Deputy Registrar

UNIVERSITY OF KERALA

No. Ad. AII. 3.304/77

Notification

Applications are invited from qualified candidates for appointment as LECTURERS in the following University Departments.

Name of Department	No. of posts
1. Department of Physics	2
2. Department of Chemistry	1
3. Department of Bio-Chemistry	2
4. Department of Aquatic Biology & Fisheries	2
5. Department of Economics	1
6. Department of Psychology	1
7. Department of History	2
8. Institute of English	1
9. Department of Russian	1
10. Department of Linguistics	1*
11. Department of Journalism	1

*The post in the Department of Linguistics is Lecturer in Telugu.

SCALE OF PAY : Rs. 600 - 1250

Appointments will be made in accordance with Section 6, Sub Section (ii) of Chapter II of the Kerala University Act of 1974.

The details of qualifications, age, etc. and application form can be had from Deputy Registrar (Administration), University of Kerala, Trivandrum on production of a receipt for Rs. 2/- from the State Bank of Travancore or Crossed Postal Order drawn in favour of the Registrar, University of Kerala, Trivandrum, specifying the post for which application forms are required.

The candidates who have sent in requisitions for application forms in response to University Notification No. Ad. AII. 3. 169/76 dt. 25-2-76 (Subsequently cancelled) will be supplied the same.

The Last Date for receipt of application is 15-4-1977.

University
Buildings,
Trivandrum,
9-2-1977.

A. Sreedhara Menon
REGISTRAR

INDIAN SCHOOL OF MINES

DHANBAD-826004.

Adv. No. 420007/77

Dated March 19, 1977.

Indian School of Mines, Dhanbad a residential "deemed University, offers programmes of study leading to the B.Tech/M.Tech Degree in Mining Engineering/Petroleum Engineering/Mining Machinery/DISM/MTech) in Coal/Mineral Preparation, and MSc and MSc (Tech in Applied Geology and Applied Geophysics. It has on its rolls about 40 Research Scholars and Fellows working for a doctoral degree in different disciplines. It has also an ambitious programme of continuing education specifically designed for the mineral industries. Besides offering consultancy/testing services (it is in the approved panel of consultants maintained by IDBI), the School is developing a highly purposeful role in the R & D field. It has a Centre of Mine System Design and proposes to organise a Centre of Higher Studies in Ore Deposits.

The School has following permanent vacancies -

1. Registrar in the pay-scale of Rs. 1300-1700 (likely to be revised to Rs. 1500-2000).
2. Assistant Registrar in the pay scale of Rs. 700-1300/-
3. Medical Officer in the pay scale of Rs. 700-1300/-plus N P A @ 25%.

Besides pay, I S M employees get allowances as admissible to Government of India employees.

Qualifications:

Registrar:

- (i) A Master's Degree in Science, Arts, Commerce or a Degree in Engineering or Technology, with not less than 60% marks in the qualifying examination. (Essential)
- (ii) About ten years administrative experience in positions of responsibility in a academic institution of degree standard, or university or research institute, or Government Department/autonomous organisations, dealing with academic matters. (Essential)
- (iii) Familiarity with academic (including examination) matters and financial matters such as budgeting, accounts etc. (Essential)
- (iv) Experience of handling agenda and minutes of meetings. (Desirable)
- (v) Knowledge of Government rules and regulations including those relating to accounts. (Desirable)
- (vi) Direct experience as Registrar or Deputy Registrar of a University or Institution of degree level. (Desirable).

Assistant Registrar:

- i) Master's Degree with at least 60% marks in the aggregate. (Essential)
- ii) Administrative experience relating to academic work including examinations. (Essential)
- iii) Ability to draft and edit reports meeting-agenda and minutes in English. (Essential)
- iv) Acquaintance with and experience of semester system (Desirable)

Medical Officer:

- i) Bachelor Degree in Medicine approved by the Medical Council of India. (Essential)

ii) Five years' experience in practice of medicine (Essential)

iii) A Post-graduate degree/diploma in medicine. (Desirable)

Age : Not more than 45 years for the post of Registrar and 40 years for the posts of Assistant Registrar and Medical Officer.

General : Applicants should be prepared to appear for an interview either at Dhanbad or Delhi/Calcutta at short notice. The successful candidate is expected to join immediately. First class Railway fare by shortest route is reimbursable to candidates coming for the interview. A 'No Objection Certificate' should be produced from their employers at the time of the interview.

How to Apply : Six copies of complete bio-data on plain paper (i. e. I. I. Name in full and address (in capital letters) 1.2 Date of birth 2.1 Nationality 2. 2 State if Scheduled Caste/Tribe. (In such cases, certificates from appropriate authorities to be attached) 3. 1 Particulars of academic and technical qualifications 3. 2 Details of experience/position held, nature of duties, scale of pay (and last pay drawn), etc. 4. 1 minimum salary acceptable 4. 2 Minimum notice required 5. Additional information if any.) accompanied by a money order receipt of Rs. 8/- (Rs. 2/- for Scheduled Caste/Scheduled Tribe candidates) in token of remittance of application fee should reach the Registrar, Indian School of Mines, Dhanbad-826004 by **April 11, 1977.**

The School reserves the right to consider cases of 'Contact Candidates' whose names have been suggested by experts even though they have not formally applied for the post.

Relaxation in age and qualifications may be given in the case of candidates otherwise considered specially suitable.

CANVASSING IN ANY FORM WILL BE CONSIDERED A DISQUALIFICATION.

M. S. Ramamurthy
REGISTRAR

LUCKNOW UNIVERSITY

Advertisement No. 7/ 1977

Applications are invited for the following posts :—

1. One Reader in Applied Economics in the Faculty of Commerce, in the grade of Rs. 1200-50-1300-60-1900.

QUALIFICATIONS:

Essential—1 (a) A doctorate in the subject of study concerned or a published work of a high standard in that subject; and (b) Consistently good academic record (that is to say the overall record of all assessments throughout the academic career of a candidate) with first or high second class (that is to say, with an aggregate of more than 54% marks) Master's degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

2. Experience of teaching honours/post-graduate classes for not less than five years and published research work of high standard in the subject.

Preferential—Experience of teaching post-graduate classes and guiding research.

LECTURERS IN THE GRADE OF Rs. 700-40-1100-50-1600 :

2. Two Lecturers in Sanskrit
3. One Lecturer in Persian
4. Two Lecturers in Ancient Indian History & Archaeology.
5. One Lecturer in Arabic
6. One temporary Lecturer in Arabic for teaching Modern Arabic Courses.
7. Two temporary Lecturers in Commerce.

QUALIFICATIONS :

Essential—(a) A doctorate in the subject of study concerned or a published work of a very high standard in that subject; and (b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to

say, with an aggregate of more than 54% marks) Master's Degree in the subject concerned or equivalent degree of a foreign University in such subject

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) supra.

Preferential—Experience of teaching degree/honours/Postgraduate classes for two years.

One Part-time Lecturer in Commerce on Rs. 200/- p.m.

QUALIFICATIONS :

Essential—First or high second class Master's Degree in the subject concerned with a good academic record.

GENERAL :

For purposes of qualifications required for the above posts, the Degree obtained in a subject taught in a Department which is subsequently constituted into separate Departments, shall be deemed to be degree in the subject concerned for the newly constituted Departments

Benefits of Provident Fund available as admissible under the rules on confirmation for permanent posts. Period of probation for permanent posts is one year. It is not necessary to fill any/all of the advertised posts.

For the posts of Lecturers, other things being equal, preference will be given to Scheduled Castes/Tribes candidates, who are considered fit. Such candidates should indicate in their applications that they belong to Scheduled Castes / Tribes, attaching certificate from the District Magistrate of the District to which they belong. No other certificate for this purpose will be entertained. In case of Scheduled caste/Scheduled Tribe candidates interviewed by the Selection Committee, if suitable candidates are not available for appointment to the posts of Lecturers, the Selection Committee may recommend appointment of suitable candidates as Research Associate in the scale of Rs. 700-1300 for a period upto three years and these persons could later compete for the posts of Lecturers as and when vacancies occur.

Applications on the prescribed form (available on request, accompanied with a self-addressed envelope of size 23 cm x 10 cm, free of cost, from the office of the Registrar) with recent testimonials, publications etc, should reach the Registrar, Lucknow University by Friday, April 22, 1977. The candidates who are in service must send their applications through proper channel. Application Forms to outstation candidates will be issued by post upto Friday, April 15, 1977

B. N. SINGH
REGISTRAR

UNIVERSITY COLLEGE OF MEDICAL SCIENCES

Ring Road, New Delhi—110016

Applications are invited for the following posts in the College:

A : Teaching Posts :

Department	Post	No.	Pay-Scale	Qualifications	Experience
Physiology	Lecturer	1	Rs. 700-40-1100-50-1600/-	MBBS, M.D. (Physiology)/M. Sc. (Physiology)/Ph.D. (Physiology)/D.Sc. (Physiology)	3-years teaching experience as Tutor/Demonstrator in Physiology of which 1 year should be after postgraduate qualification.
	Demonstrators	2	Rs. 300-25-350/-*	MBBS or M.Sc. (Physiology for non-medical persons)	
Pathology	Demonstrators	4	Rs. 300-25-350/-*	M.B., B.S.	
Pharmacology	Demonstrators	2	Rs. 300-25-350/-*	M.B., B.S.	
Bio-chemistry	Professor	1	Rs. 1500-60-1800-100-2000-125/2-2500/-	MBBS, MD (Biochemistry)/M.Sc. (Medical Biochemistry)/Ph.D./D.Sc. (Biochemistry)	As Associate Professor/Reader in Biochemistry for 5 years in a Medical College.
	Demonstrators	2	Rs. 300-25-350/-*	MBBS, or M. Sc. (Bio-chemistry for non-medical persons)	
Social & Preventive Medicine.	Lecturers	2	Rs. 700-40-1100-50-1600/-	MD (PSM)/Speciality BD. of PSM (USA)/Dr. P.H. (John Hopkins)/Dr. P.H. (Harward)/Dr. P.H. (California) M.D.(Med.) with D.P.H./M.D. (Comm. Health)	3-years teaching experience as Tutor/Demonstrator in Pre. & Soc. Med. or as Epidemiologist/Health officer of which 1 year should be after post-graduate qualification.
	Demonstrators	3	Rs. 300-25-350/-*	M.B., B.S.	
Anatomy	Demonstrators	2	Rs. 300-25-350/-*	M.B., B.S./M.Sc. (Anatomy for non-medical person.)	
	Demonstrators	2	Rs. 300-25-350/-*	M.B., B.S./M.Sc. (Anatomy for non-medical person.)	
Microbiology	Lecturer	1	Rs. 700-40-11000-50-1600	MBBS, MD(Bacteriology)/MD (Microbiology)/MD (Bacteriology with Pathology)/MD (Pathology & Bacteriology)/M.Sc. (Bacteriology)/M Sc. (Microbiology)/Diploma in Bacteriology.	3 years teaching experience as Tutor/Demonstrator in Bacteriology/Clinical Pathologist/Resident Pathologist of which 1 year should be after post-graduate qualification.
	Demonstrators	2	Rs. 300-25-350/-*	M.B., B.S. or M.Sc. (Microbiology) for non-medical persons.	
Forensic Medicine	Reader	1	Rs. 1200-50-1300-60-1900/-	MBBS, MD (Forensic Medicine/MD (Path) /Speciality Board of Pathology (USA)	As Assistant Professor/Lecturer in forensic Medicine for 3-years in a Medical College.
	Lecturers	2	Rs. 700-40-1100-50-1600/-	MBBS, MD(Forensic Medicine)/M.D. (Path.)/Speciality Board of Pathology (USA).	3-years teaching experience as Tutor/Demonstrator in Forensic Medicine/Casualty Medical Officer/Resident Pathologist/or as a Medical Officer in State Service doing Medico-legal work of which one year should be after Post-graduate qualification.
	Demonstrators	3	Rs. 300-25-350/-*	M.B., B.S.	

B : FOR RURAL & URBAN HEALTH CENTRES :

Lady Medical Officer	2	Rs. 700-40-1100-50-1300/-	MBBS with MD (Gynae & Obst.) DGC with experience.
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(*Pre-revised scale)

Medical Social Worker (Female)	2	Rs. 425-15-500- EB-15-560- 20-700/-	M A. in Social work	Atleast two years field experi- ence in Medico-social work.
Public Health Nurse	2	Rs. 425-15-500- EB-15-560- 20-700/-	B.Sc. Nursing or 'A' grade Nurse with Health Visitor Training or 'A' grade nurse with Public Health Training.	
Technical Assis- tants	3	Rs. 425-15-500- EB-15-560- 20-700/-	B.Sc. from recognised Univ. Diploma in Medical Laboratory Technology	Three years experience as Sr. Lab. Asstt. in a Medical Col- lege/Hospital.
Record Clerks	2	Rs. 260-6-290- EB-6-326-EB- 8-390-10-400/-	Higher Secondary	Two years experience of hand- ling medical records in a Medi- cal College/Hospital. Profi- ciency in typing essential.

C : GENERAL POSTS :

Assistant Registrar	1	Rs. 700-40-900- EB-50-1300/-	A Second class Master's Degeee	Atleast Ten years office experi- ence of which five years should be in a Supervisory capacity.
Superintendent (Admn.)	1	Rs. 550-25-750- EB-30-900/-	A Second class Bachelor Degree	Ten years office experience of which atleast three years should be as Sr. Asstt./Head Clerk. Preference to be given to candi- dates having worked in an edu- cational institution.
Superintendent (Accounts)	1	Rs. 550-25-750- EB-30-900/-	A Second class B. Com. Degree	Ten years experience of which at least 3 years should be as Sr. Assistant/Head Clerk in Accounts Section of an Edu- cational institution.
Senior Assistant	1	Rs. 425-15-500- EB-15-560- 20-700/-	Bachelor's Degree	Five years experience as Assis- tant/UDC. Preference to be given to those having ex- perience of dealing with estab- lishment work in an educa- tional institution.
Assistants	3	Rs. 330-10-380 EB-12-500 EB-15-560/-	Graduates. Preference will be given to those having worked in an educational institution. The candidates will be required to qualify the prescribed test in General English.	
Stenographer (English)	1	Rs. 425-15-500 -EB-15-560- 20-700/-	Atleast Matriculation. Minimum speed 120 w.p.m. in Shorthand and 40 w.p.m. in English type- writing. Candidates shall also have to qualify in the English Test.	
Steno-typists (English)	8	Rs. 330-10-380- EB-12-500- EB-15-560/-	Matriculation with proficiency in typewriting (35 w.p.m.) and proficiency in Shorthand 80 w.p.m. Candidates shall be required to appear and qualify in the tests in English, Shorthand and type- writing.	
Clerk-typists	3	Rs. 260-6-290- EB-6-326-8- 366-EB-8- 390-10-400/-	Matriculation with minimum speed of 35 w.p.m. in English typewriting.	

				Essential :	
Photographer-cum-Artist	1	Rs. 425-15-500- EB-15-560- 20-700/-		a) Matric/Hr. Sec. with Science subjects. b) Diploma in Arts & Photography from a recognised Institution.	i) Experience in Micro-filming, Reflex Printing, Projection slide making, Reproduction of Scientific Drawing, Charts & Dark-Room Techniques. ii) Practical experience of Photography, developing, Printing, enlarging, colouring & Other processing work. iii) Photomicrography, Black & White & Colour movie Camera. iv) Use of Movie Projector. v) Knowledge of preparing graphs, histograms & charts etc. 3-years experience as Junior Laboratory Attendant in a Medical College/Hospital.
Junior Laboratory Assistants	4	Rs. 260-8-300- EB-8-340- 10-380-EB- 10-430/-		Matriculation/Higher Secondary with a Diploma/Certificate in Medical Lab. Technology from recognised Institution.	
Junior Laboratory Attendants	2	Rs. 210-4-250- EB-5-270		Matriculation examination with Science subjects from a recognised Board of University.	
Library Assistant	1	Rs. 330-10-380- EB-12-500- EB-15-560/-		Essential : B.A./B.Sc./B.Com. & Certificate in Library Science. Desirable : i) Knowledge of Hindi and some other Modern Indian Languages; ii) Knowledge of typing with minimum speed of 35 w.p.m.	
Library Clerk	1	Rs. 260-6-290- EB-6-326- EB-8-350/-		Essential : Matriculation or Higher Secondary Desirable : Preference will be given to those who hold a Certificate in Library Science.	
Senior Library Attendant	1	Rs. 260-6-326- EB-8-350/-		Matriculation or its equivalent with good handwriting and previous experience of Library work.	

N.P.A. (for candidates with Medical Qualifications) and other allowances as per rules in force from time to time.

The prescribed application form can be had from the Office of the Principal, University College of Medical Sciences, New Delhi-110016 either personally or by sending a self addressed envelope with postage stamp worth Rs. 2.40.

Selected candidates would have to produce original documents relating to their age, qualifications, experience etc. before joining the appointment.

Applications duly accompanied by attested copies of degree and other certificates and a Postal Order for Rs. 5/- drawn in favour of Registrar, University of Delhi (except for the posts of Professor/Reader/Lecturer) should reach the undersigned not later than 9th April, 1977.

NOTE :

- It will be open to the College to consider the names of suitable candidates who may not have applied.
- Relaxation of any of the qualifications may be made in exceptional cases in respect of all posts on the recommendations of the Selection Committee.
- Canvassing in any form by or on behalf of candidate will disqualify.
- Candidates for post of Professor, Reader and Lecturer only called for interview from outside Delhi will be paid contribution towards railway fare as per rules.

PRINCIPAL

INDIAN INSTITUTE OF
TECHNOLOGY KANPUR

IIT POST OFFICE
KANPUR

Advertisement No. 9/77

Applications are invited for five (5) posts of Professors/Assistant Professors/Lecturers in the Department of Physics. The Department is seeking individuals with ability and aptitude for teaching, research and development in the following areas :

1. Laser Physics/Spectroscopy
2. Nuclear Physics
3. Solid State Physics
4. High Energy Physics

(a) Professors : Scale of Pay Rs. 1500-60-1800-100-2000-125/2-2500.

Qualifications :

Essential : Doctorate with excellent academic record and at least eight years of professional experience of good quality outside the work for the degrees. The candidate should have published adequate number of good research papers in journals of repute and/or developmental project reports based on the work outside his own thesis work. The candidate must have demonstrated ability in teaching, guiding and carrying out independent research as evidenced by significant contributions by way publications of good quality in journals of repute.

b) Assistant Professors : Scale of Pay Rs. 1200-50-1300-60-1900.

Qualifications :

a) **Essential :** Doctorate with good academic record and at least three years of professional experience with good research/development record, outside the work for degrees as evidenced by research publications in journals of repute and/or developmental project reports.

b) **Desirable :** Experience in teaching undergraduate/postgraduate programmes—A record of independent research proficiency in the specified (or related) areas of specialization.

c) Lecturers : Scale of Pay : Rs. 700-40-1100-50-1600.

Qualifications :

a) **Essential :** Doctorate with good academic record and adequate research development experience resulting in research papers of good quality.

b) **Desirable :** Some teaching/research experience and a strong interest in developing undergraduate/postgraduate programmes and also in research and developmental activities in the specified (or related) areas.

The Department of Physics teaches undergraduate courses to students majoring in science and to those majoring in engineering and teaches postgraduate physics courses leading to MSc. and Ph. D. degrees. The research activities of the Department are at present in the following branches of physics : Magnetic resonance; nuclear physics, lasers and masers; crystallography; dislocations in crystals, lower temperature physics; solid state spectroscopy; microwave, infrared and optical spectroscopy, high energy physics and elementary particle theory; nuclear theory and solid state theory.

The Indian Institute of Technology, Kanpur has well equipped laboratories and central facilities. The computer Centre has I.B.M. 7044, 1401 and 1800 and PDP 1 systems as also ECIL TDC 316 and a group of experienced programmers. The following central facilities are available. 2 Mv Van de Graaff accelerator, 4096 multi channel analyser and other radiation detection equipment liquid nitrogen and liquid helium plants, NMR, EPR, Mass Spectrometer, X-ray plant, UV and IR Spectrometers, glass blowing shop, crystal growth facility, central instrumentation laboratory, precision machine shop, electron microscope besides a large workshop for the fabrication of specialised research apparatus. The Institute has a well stocked library with more than 1,50,000 volumes and 1,300 periodicals.

Excellent residential housing, when available is provided on Campus. The campus facilities include a primary and higher secondary schools, a health centre and a shopping centre. Besides there is a modern swimming pool.

In the category of Lecturer, one post will be reserved for SC/ST candidates. In the event of non-availability of SC/ST candidates the reserved post would be treated as dereserved.

Posts are permanent and carry retirement benefits in the shape of CPF scheme or CPF-cum-Gratuity Scheme or

GPF-cum-Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year the appointment will be on probation. Besides, pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 cm x 10 cm size. Applications should be accompanied by a postal order for Rs. 7.50 (Rs. 1.87 for Scheduled Castes/Tribe candidates).

Applicants from abroad may apply on plain paper enclosing a complete bio-data and names of three referees from whom reference letters may be obtained.

Applications should reach the Registrar, Indian Institute of Technology IIT Post Office, Kanpur-208016 UP, (India) on or before 20th April, 1977.

UNIVERSITY OF KERALA

No : Ad. AII. 3. 310/77

Notification

Applications are invited from qualified candidates for appointment to the following posts in the University of Kerala.

1. One post of Reader in Islamic History in the University Department of History.
2. One post of Reader in the University Department of Journalism.
3. One post of Reader in the University Department of Economics.

Scale of Pay : Rs. 850 - 1450

Appointments to the posts notified will be made in accordance with Section 6 Sub Section (ii) of Chapter II of the Kerala University Act of 1974.

Further particulars and application forms can be had from the University Office on production of a receipt for Rs. 2/- remitted in any branch of the State Bank of Travancore or on payment of the amount by crossed postal order payable to the Registrar, University of Kerala, Trivandrum. Requests for application forms should be addressed to the Deputy Registrar (Administration), University of Kerala, Trivandrum.

Last date for receipt of applications is 15-4-1977.

University
Buildings,
Trivandrum.
7-2-1977.

A. Sreedhara Menon
REGISTRAR

**PANJAB UNIVERSITY
(CHANDIGARH)**

Advertisement No. 3/77

Applications are invited for the following posts at V.V.B.I.S. & I.S., Hoshiarpur so as to reach the Registrar Panjab University, Chandigarh, by 30-4-1977 alongwith postal orders for Rs. 7.50 for the posts at Sr. No. 1 & 2 and Rs. 5/- for the posts at Sr. No. 3&4.

1. Director Professor-I (Pay-Scale :
1500-60-1800-
100-2000-125/2
-2500)

Qualifications : i) A first or second class Master's degree in Sanskrit of an Indian University or an equivalent qualifications of foreign University with bright academic record.

ii) Either a Research Degree of Doctorate standard or published work of high standard in journals of repute in the field of Vedic Language and Literature.

iii) Atleast 10 years experience of research in Vedic Language and Literature at a University or a recognised Research Institute and sufficient experience of guiding research and supervising research projects. Good knowledge of Nirukta Paninian Grammar (Vyakarna)

iv) Working knowledge of Avestan, German and French languages.

2. Lecturer in Sanskrit (Research)—I (pay scale Rs. 700-40-1100-50-1600).

Qualifications :

Essential : i) A Doctoral degree on a Vedic or grammatical subject or published work of an equally high standard on the subject.

ii) Consistently good academic record with first or high

second class (B Plus) Master's degree or an equivalent degree of a foreign University in Sanskrit (Veda or Vyakarana group).

iii) Specialisation in linguistics.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his theses or from his published work of very high standard it may relax any of the qualifications prescribed in (ii) above.

Provided further that if a candidate possessing a Doctoral degree or equivalent published work is not available or is not considered suitable a person possessing a consistently good academic record (due weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain Doctoral degree or give evidence of published work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Desirable : i) Five years' experience in collaborative Research or lexicographical work.

ii) Good knowledge of English and French, German or Avestan.

3. Research Assistants-2 (Pay scale : Rs. 300-25-600)

Qualifications :

Essential : i) First class Master's degree in Sanskrit with atleast 2 years' research experience or 5 years' experience

in a literary or publishing institution.

ii) Good knowledge of Linguistics, Vyakarana and Veda.

Desirable : i) Proficiency in English French and German or Avestan.

ii) Original papers in Veda, Vyakarana or Linguistics.

4. Teaching Assistants-2 (Pay Scale : 300-25-600)

Qualifications :

Essential : i) First or high Second Class Acharya in 2 subjects or M.A. with Acharya, the specialization in one Acharya or M.A. being Veda or Darshana.

ii) Three years' teaching experience in Acharya classes or seven years' in Shashtri classes.

Desirable : Proficiency in English.

Incomplete applications and those received after the due date will not be entertained. Persons already in service should route their applications through proper channel. They may send a copy in advance on the prescribed proforma direct to the University. They will, however, be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify a candidate.

Application form can be obtained from the office of the Finance & Development Officer, Panjab University, Chandigarh by making a written request accompanied with self-addressed stamped envelope of 23 cm x 10 cm.

**GARHWAL UNIVERSITY
SRINAGAR (GARHWAL)**

Applications are invited for the post of Research Associate at Rs. 800/- p. m. all inclusive for the DST financed research project entitled "Functional Dynamics of Natural Vegetation and Crop Plants at different Altitudes in Garhwal Himalayas". Applicant should be Ph. D. with Plant Physiology Or Plant Biochemistry as specialisation. Preference will be given to those with experience of working on Photosynthetic and Respiratory Processes in Higher Plants. Application should reach to the undersigned latest by the April, 10, 1977.

**Chander Bhan
REGISTRAR**

University News

A CHRONICLE OF HIGHER EDUCATION & RESEARCH APRIL 16, 1977 80 PAISE



Teachers working at the Language Laboratory recently inaugurated at the H. M. Patel Institute of English, Vallabh Vidyanagar.

CLASSIFIED ADVERTISEMENTS

SAMBALPUR UNIVERSITY JYOTI VIHAR : BURLA

Advertisement No. 7854/TDS.

Dated the 25-3-77

Applications in the prescribed form with attested copies of marksheets and certificates of the examinations passed are invited for the following posts in the Lajpatrai Law College, Sambalpur.

Seven copies of the application forms will be supplied from the University Office to each candidate in person on cash payment of Rupees ten. Candidates intending to receive forms by post are required to send (a) Crossed Postal Order of Rs. 10/- payable to the Finance Officer, Sambalpur University (b) a self addressed envelope (23cm×10cm) with postage stamps worth Rs. 2.85p affixed

(A)	Name of the post	Number of posts	Scales of pay
1.	Professor-cum-Principal	One	Rs. 1500-60-1800-100-2000-125/2-2500.
2.	Lecturer in Law	One	Rs. 700-40-1100-50-1600.

(The posts carry C.P.F. and Gratuity benefits as would be sanctioned by the University from time to time).

(B) Age of retirement-Sixty years.

(C) Qualifications :

1. Professor-cum-Principal

(i) At least first or Higher Second Class Master's Degree in Law with 55% of marks or Grade B+.

(ii) A Doctorate Degree or published work of equivalent standard.

(iii) Experience in conducting and guiding Research work

(iv) Independent published work of High Standard in addition to requirement in (ii) above.

(v) (a) Teaching experience of ten years preferably in a Law College.

OR

(b) Professional and Teaching experience of fifteen years out of which at least five years must be in Teaching Law preferably in a Law College (Professional experience includes experience at the Bar and at the Bench).

2. Lecturer in Law

(i) At least first or high Second Class Master's Degree in Law with 55% of marks or Grade B+.

(ii) At least two years Teaching Research/Professional experience.

(iii) Doctorate Degree or Published work of an equivalent standard.

A Professor-cum-Principal may be appointed on contract basis for a specified period.

to it with the words "APPLICATION FORMS FOR TEACHING POSTS IN SAMBALPUR UNIVERSITY" super-scribed on it. Money Order/Cheque will not be entertained.

The last date of receipt of applications is 10th May, 1977.

The candidates will be required to appear at an interview before a Selection Committee at their own expenses.

Documents submitted alongwith the application will not be returned.

All communication should be addressed to the Registrar, Sambalpur University by designation only. No interim correspondences in this regard will be entertained.

Sd/-
REGISTRAR

ANNAMALAI UNIVERSITY

Applications are invited for the following teaching posts. Applications can be obtained from the undersigned on payment of Rs. 5 by Postal Order/Money Order which is not refundable. Completed applications with 5 additional copies should reach the Registrar, Annamalai University, Annamalaiagar-608 101 before 30th April, 1977.

1. Professor and Head of the Department of English ... 1 post
2. Professor and Head of the Department of Tamil ... 1 post
3. Professor and head of the Department of History and Politics ... 1 post

For Centre of Advanced Study in Marine Biology (U.G.C. posts)

4. Professor of Marine Chemistry ... 1
5. Professor of Marine Ecology ... 1
6. Professor in Fishery Science/Coastal Aquaculture ... 1
7. Reader in Physical Oceanography ... 1
8. Reader in Marine Botany/Marine Microbiology ... 1

9. Reader in Marine Pollution/Bio-geochemistry ... 1
10. Reader in Education (to teach M Ed.) (U.G.C.post) ... 1
11. Lecturers in Commerce ... 2
12. Lecturer in Music (Vocal) ... 1
13. Tutors in English ... 3

Qualification :

Professors : A first or second class Master's degree in the Subject and a doctoral degree with published research work of high standard. 10 years experience in teaching postgraduate classes and guiding research. Specialisation-For No. 4 Marine Chemistry No. 5 Marine Ecology and (6) Coastal Aquaculture.

Readers in Marine Biology : A first or second class Masters degree in (7) Oceanography (8) Botany/Microbiology/and (9) Marine Biology/Zoology/Geology respectively and Doctorate degree with published research work of high standard. 5 years of experience in teaching post-graduate classes. Specialisation Oceanography/Marine Botany or Marine Microbiology/Chemical Pollution or Marine Biogeochemistry respectively.

(10) Reader in Education : A master's degree with first or Second Class in psychology/Sociology / English/Mathematics plus Master's Degree in Education. A research degree of Doctorate Standard or published research work of high standard in the subject. 5 years teaching experience of post-graduate classes and guiding research.

(11) Lecturer in Commerce :—A master's degree with first or second class with 3 years teaching experience at college level. Should have Advance Accountancy/Cost Accounts/Auditing as special subjects.

(12) Lecturer in Music :—(Vocal) Preference will be given to first grade musicians with not less than 10 years experience in the field.

(13) Tutors in English—Master's Degree in English Literature. Retired B.A. L.T. Teachers are preferred.

Scale of pay—Professors :

1100-50-1300-60-1600

plus D.A. Rs. 120 p.m.

Readers : 700-50-1250

plus D. A. Rs.120 p.m.

Lecturers : 400-40-800-50-950 plus

D.A. Rs. 120 p.m.

Tutors : 370-15-475-20-575-25

650 plus D. A. Rs. 120

p.m.

For retired B.A.L.T. teachers

Rs. 295 consolidated.

Candidates called for interview should appear at their own cost. Candidates who are already in service should apply only through their employers.

Annamalaiagar.
23-3-77

Registrar
Annamalai University

UNIVERSITY NEWS

Vol. XV

APRIL 16,

No. 8

1977

*A Fortnightly Chronicle
of Higher Education* **Price
80 Paise**

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association.*

Editor : ANJNI KUMAR

Youth Activities in Universities

J. D. Sharma*

CENTRI LIBRARY
MYSORE-2A

5 MAY 1977

Youth is the most vital organ of social framework. Like an atom of power youth may be utilised both for productive and destructive purposes. Whereas a disciplined and dedicated youth may ensure the needed socio-economic development, an indisciplined and irresponsible youth may bring incalculable harm, even chaos to society. It becomes, therefore, the responsibility of centres of learning to cast the youth in the mould of social responsibility and to harness their latent energies towards building a happy and healthy social order an order in which social equality is practised without distinction.

This is all the more applicable to conditions in India. Ours is a developing country which, after shaking off the alien rule lasting over quite a few centuries, is now set on the path of achieving a just social and economic order for its teeming millions. Our resources, compared to the more advanced countries of the world, are limited. We are also wanting to achieve the progress which other countries have attained over the centuries in a matter of decades and years. The real answer to this gigantic problem lies in harnessing the youth of the country in the great task of reconstruction, social, economic and all the rest. In the light of these facts it becomes the bounden duty of the centres of learning to prepare a recipe of such academic programmes and other activities as may equip the youth with the requisite physical and mental qualities so that they may effectively undertake the task of restructuring the society and become a positive force for achieving the cherished social and economic objectives.

This discussion raises an important question: "What should be the pattern of Youth activities which could ensure the quick achievement of the twin objective, viz., the development of the latent qualities of the students' personality on the one hand and the socio-economic transformation of the dormant Indian Society on the other". These activities should, to my mind, fall under two broad heads:

1. Physical and health fitness through games, sports and cultural activities; and
2. Development of a mental attitude which would enable the youth to place the social good above personal gain & convenience.

Physical and health fitness should constitute an integral part of youth activities in all educational institutions, right from school to the post-graduate level. Every student should be required to attain a minimum level of physical fitness so that he could pass at least "one star test". He may also be encouraged to pass "two or three star tests". The programme of physical and health fitness should form an inbuilt part

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of co-curricular activities in all institutions. This may be in the form of NCC, National Fitness Scheme, Games Sports and cultural activities. It goes without saying that what the student can learn on the play-field and through these other activities cannot be acquired anywhere else.

I would go a step further and say that the educational institutions should take steps in the direction of making games and sports compulsory. Our neighbouring state, Punjab, has already done it.

The concept of games and sports should change in the light of resource limitations. Every institution does not have adequate playfields nor even money resource to meet the requirements of extensive games like cricket, hockey etc. Some alternative games such as kabaddi, koh-kho, volleyball or even basketball may be encouraged which in addition to providing all the advantages of big games, are less expensive and need less space and perhaps not much of expertise. Yogic exercises may also be included in this category which are equally beneficial for the physical and mental health of the student.

Side by side with these physical activities the youth must be taught from the very beginning that State property should be respected even more than individual property for the simple reason that the State property is put to use by the entire society while individual property is used only by a few individuals. When this sort of feeling is inculcated amongst the students at an early age no one would even think of putting on fire a State bus or a State building when there is a strike or commotion. The socialistic pattern is primarily based on the concept of cooperative effort as against mere individual enterprise. Students have to be initiated into this pattern of thinking and working right from the nursery school stage. This can be done through a number of group activities including group singing. The whole perspective of history also changes under such a pattern. For instance, the Historian would then say that the Taj Mahal was built not by Shah Jahan (who did not lay a single brick) but by the thousands of labourers and masons who toiled hard for years at end to raise this beautiful monument.

Having grafted these basic physical and mental outputs and attitudes through the educational system the youth must then be made active partners in the programme of socio-economic development.

Every college or university student should be enrolled as a volunteer in the programme not only of rural reconstruction but also in solving the problems of modern urbanisation. Separate programmes may be chalked out for separate groups of students suiting their aptitude and ability. Some for example may be involved in the construction of roads and buildings, some in public hygiene, a number of them in agricultural operations and in adult education. This last should include formal or informal talks on various anti-social customs and practices still prevalent in our society, as for example, untouchability, dowry, population explosion etc. This does not require any

separate organisation. The National Service Scheme may be fully pressed into service and where necessary restructured by way of incorporating the time-bound programmes referred to above. A beginning has already been made in this regard in Jammu University. About 1500 students are being enrolled under the National Service Scheme during the session 1976-77. At present the scheme is in operation in the university teaching departments and all the affiliated colleges of the University. Each institution has adopted a village for their activity. These activities cover various aspects of social and economic development, such as cleanliness drive, child and adult education, agricultural operations, construction of roads etc.

The work for each village or a cluster of villages or slum area in a town may be chalked out well in advance in consultation with the local populace and the local authorities. There should be proper record of the work allotted to each student or group of students and of the task completed by them. On the basis of this performance the student should get credit in the examination.

The time, indeed, has come when social work may be made compulsory for each student. Unless he performs at least two months of social work in accordance with the prescribed norms, he should not be awarded the final University degree. In this way each student shall have to put in about one year of social service within six years of his student career. During these twelve months he will develop in him a sense of dignity of labour, the elements of self-help, mutual understanding, leadership qualities and even decision making ability which will lay firm foundation for the success of his future career. This will also provide immense satisfaction to him which will continue to be a moving force behind all his activities.

Another field of activity in which students in universities and colleges could participate with advantage is the management of various curricular and co-curricular programmes and policies, more importantly the latter. The participation of students in the decision-making bodies of a University is still a subject of debate and has yet to be given a fair trial but there can be no two opinions about their meaningful participation in activities like running the hostel mess and canteen, book shops and cooperative shops for articles of daily consumption, organisation of sports and cultural activities in the University, purchase of library books, framing of time-table, maintenance of discipline on the campus and participation also in University bodies like the Academic Council. This would help our young men and women develop a sense of involvement and belonging to the institution where they are studying and should stand them in good stead in their future life.

A note of caution needs to be sounded at this stage. It has been noticed that when young men and women from the urban areas go to their less fortunate brethren in the rural areas or in city slums they sometimes try

(Continued on Page 230)

Defence Studies

As an Academic Discipline

R. N. Misra*

"If you wish for peace understand war". This famous saying of a renowned military thinker Liddell Hart is the guideline for the subject of Defence Studies. War plays an important role in the life of a nation. It shapes the destiny of its people. In the past, it has played dominant role in the rise and fall of various civilizations. History of mankind is the history of wars. Without proper study of war, human history will remain incomplete. If one studies world history of the last 4000 years one will realise that out of this long period there are only 160 years of peace. Rest of the period is the period of one war or another. Most of the important inventions in human history took place only to support wars. Prof. Gordon Childe rightly observes that the first use of metal was for weapons rather than for tools.

This establishes the universality and importance of wars. The importance of the study of wars can be further enumerated in the words of a Chinese military thinker Sun Tzu, who wrote :

"War is a great affair of state
the realm of life and death
the road to safety or ruin
a thing to be studied with extreme—diligence".

Since war has its various economic, political, social and psychological aspects, such study became very complicated and interdisciplinary in character. Since time immemorial its study as an instrument of statecraft had been done by various scholars. In India Kautilya and in China Sun Tzu have been prominent scholars of the ancient period.

In medieval and modern times such study remained confined to the Western world. They tried to study war in the academic frame-work. Therefore, they could produce such renowned military thinkers like Machiavelli, Clausewitz, Jomini, Liddell Hart, Fuller, Douhet and Mahan. Our country remained far behind in this field. Even in the field of military history, the West had taken a great lead,

Defence Studies in Foreign Countries

This subject is introduced for academic study in colleges and universities of various countries of the world under varying nomenclatures like war studies, defence studies, strategic studies, military history and military studies.

According to the report published by the Institute of Strategic Studies, London, in 1970, the subject then flourished in 33 countries of the world, including Australia, Britain, Canada, the U.S.A., France, Germany and Japan.

Kings College of London University is offering postgraduate, M.Phil and Ph.D. courses in war studies. Oxford University of Britain has shown great interest in Strategic Studies and Military History. It has set up a Chichele chair for Military History. The works of Prof. Norman Gibbs and Prof. Michael Howard are well known to those interested in the political aspects of strategy.

Six universities in Canada are running various courses of Military History, Strategic Studies and Defence Studies.

In some countries "Institutes of Strategic Studies" have been opened to collect, collate and analyse strategic information. Such institutes serve as a non-official civilian source to provide near authentic information on delicate and sensitive military matters. The International Institute for Strategic Studies, London, is one of the most famous among them.

Since 1975, Pakistan has also introduced Military Science, Civil Defence and First Aid as a compulsory subject for the higher secondary and college students. In China, even Nuclear Civil Defence is a part of general education in colleges and universities.

Defence Studies in Indian Universities

This subject is taught in various colleges and universities of India mainly under three nomenclatures i.e. Defence Studies, Military Studies and Military Science.

As many as 23 universities in U.P., M.P., Maharashtra, Haryana and Punjab have introduced this subject as one of the elective subjects in the curriculum of the undergraduate classes in more than 350 colleges working under their jurisdiction. Only 7 universities : Allahabad, Jiwaji (Gwalior), Poona, Meerut, Kanpur, Gorakhpur and Punjabi University have introduced a postgraduate course in the subject.

Jawaharlal Nehru University (Delhi) offers a M.Phil course in Disarmament Studies under the School of International Studies.

Recently Madras and West Bengal have also shown some interest in introducing the subject in their colleges and universities.

Other than Universities, India has one civilian institute "The Institute of Defence Studies and Analysis" which publishes monthly and quarterly journals for news of strategic interest and feeds newspapers and journals in India and abroad with their articles and research papers dealing with defence and strategic problems.

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Topics Covered Under this Subject

The following topics are mainly covered by various universities of India under this discipline.

- (a) Nature, origin, features, future and control of war.
- (b) Military History or History of warfare.
- (c) Problems of national security and their solutions.
- (d) Elements of modern war or contemporary problems of war—(nuclear, guerilla, cold wars, arms race and disarmament).
- (e) International laws (of war and neutrality particularly).
- (f) International relations.
- (g) Geo-politico and military studies of some important areas like China, West Asia and Pakistan.
- (h) Military Psychology.
- (i) Defence Management.
- (j) Higher Defence organisation, organisation of armed forces, their arms, equipments and role.
- (k) Military Geography.

Universities choose the topics for the curriculum in Defence Studies, mostly out of this list according to their concept of the subject and choice.

Utility : Modern wars are total and fought with entire national resources, i.e., human, moral and material resources. Both civilians and soldiers have to share responsibility in war. Therefore, it is imperative to educate civilians with the nature of war and its impact over society and nation. Such education will prepare them mentally to face various problems of war boldly, courageously and promptly and prepare them for making necessary sacrifices in any such an eventuality.

Maj. Gen. D. K. Palit supports the idea in the following words in his book "Essentials of Military Knowledge"—"In a future conflict success in higher direction of war as well as in national policy making will depend to a great extent upon the combined contribution of military experts, scientists and intellectuals. If this contribution is to be significant it is essential that a degree of their knowledge of the mechanics and the process of war be made a part of the general educational system."

Similar views have been expressed by our former Defence Secretary, Mr. S. S. Khera in his book "Defence Problems of India"—"Defence Studies far from being an isolated and reserved territory of Generals and Services Head Quarters, involves statecraft in its highest form and national defence is the concern not merely of national government. It is concern of the nation as a whole".

In a democratic country like India, such education would play an important role where public opinion can influence the process of policy making including defence policy.

Such education has special utility to our younger generations and youth who will have to face future war which may be much more furious and devastating. On their shoulders rest the security of our nation. It needs their understanding and support as

soldiers or civilians in any such eventuality. Universities and colleges could play a significant role in making them not only socially aware but also defence conscious.

The growth of this discipline in our country is a bit unplanned and unsatisfactory due to lack of interest of our educationists, administrators and scholars. This field was considered useful for only few professionals. Since the 1962 Chinese aggression, there is considerable change in our thinking and outlook. Now since many scholars, journalists, retired army officers and defence secretaries have shown interest in this field and published a large number of books related to different defence matters. The Indian Institute of Defence Studies and Analysis was founded thereafter and a few universities and colleges started such subjects like Defence Studies, Military Science and Military Studies at the postgraduate level to study them in depth.

As opposed to the policy of keeping people in dark in defence affairs it was considered useful to inform them regarding the various aspects of national security to ensure their understanding and willing support. The approach was well in line with democratic traditions of our country.

Scope: The postgraduate degree in the subject offers so far scope in research in the fields of military history, strategic studies and in various socio-political and economic problems of war. In colleges and universities, its postgraduates stand chances of their absorption as teachers. Army education corps recognises its degree for commission in that corps, whenever a vacancy falls. With some training in journalism students of this subjects could contribute a lot towards 'defence journalism.'

U. P. included this subject in the list of subjects for the State Civil Services Competitive Examinations, (PCS) for various posts within the province. In Punjab this issue is under consideration. The subject keenly awaits its inclusion in the list of subjects prescribed for the UPSC competitive examinations like the NDA, IMA and IAS. Jawaharlal Nehru University has recognised the post-graduate degree in the subject for admissions to various M.Phil courses in the Area Studies in the School of International Studies.

The Department of Defence Studies, Punjabi University, Patiala, has introduced a novel scheme of preparing our youth for various competitive examinations like the NDA and Combined Defence Services examinations along with academic study of the subject. It also proposes to run a course of 10 days; twice a year to teach students important aspects of personality tests, intelligence tests; group discussions and group tasks. It is making a keen effort in inculcating in its students officer-like qualities through lecturing and interviews based on general knowledge and current affairs.

With little planning and incentive this subject could show its vast potentialities in achieving a healthy trend in military thinking and make the younger generation well aware towards defence problems, defence preparedness and their subsequent role as an enlightened citizen.

Grading of Restructured Examinations

V. Natarajan*

Some Universities as a part of implementation of Examination Reform Plan circulated by the University Grants Commission, have restructured the pattern of their question papers in various subjects and many other Universities are on their way to implement restructured pattern of question papers. Nearly 40 Universities in the country are adopting 7 point scale Grading System. First of all in their Post-graduate examinations and a year later in Under-graduate examinations also. In most of the cases, the restructuring of their question papers is in the form of:

Part A: Objective type questions (constant alternative, Multiple Choice/Multiple facet, matching and rearrangement kinds).

Part B: Short answer questions (simple question, completion short answer, short problems)

Part C: Long answer questions.

Invariably part A will have 30 Multiple choice questions, Part B 10 short answer questions and one essay question in Part C. Part A will carry 30 marks and for 30 minutes; Part B 50 marks for 120 minutes and Part C 20 marks for 30 minutes. An important feature of such a restructured pattern is that compared to present practice, it increases the number of questions to be answered by students quite significantly. With forty odd questions, it is possible to cover the entire syllabus adequately and to include all the important objectives which is simply not possible when student answers five or six questions. The content validity of such a restructured paper is pretty high and the general overall reliability very much improved. There is better objectivity in the paper generally. The accepted 7 point scale grading system in various Universities in the country is as follows.

	Points
O outstanding	6
A very good	5
B good	4
C average	3
D below average	2
E poor	1
F very poor	0

Most of the Universities have decided to adopt 'direct grading'. Madurai University has even developed in a few subjects models of answers of different grade categories to a single question. Some Universities have also decided to continue with the percent marking and then convert these marks into grades with the help of Normative Standard Tables prepared one each for each subject based on the results of the last 3 years of students in the same subject. Two distinct methods of conversion have emerged,

one is suggested by University Grants Commission and the other by the Association of Indian Universities. A comparison of these two methods in respect of Under-graduate examinations of a University has been made and it is concluded that while the University Grants Commission method is simple, it involves over grading to varying degrees while the Association of Indian Universities method is a bit complicated but it does not involve overgrading. It is strongly felt that such an arrangement for conversion of marks to grades is only a transitory arrangement and that within a couple of years, Universities operating a grading system will do well to switch over to 'direct grading'. The aim of this paper is to suggest a system of grading such a restructured examination with objective and subjective questions. The method suggested is quite practicable and can be handled by either controller's unit of special Examination Units in these Universities. In many cases, it will be necessary to have a recourse to a digital computer.

System of Grading

Let us take that a typical restructured paper in a subject consists of

Part A Objective

type item: 30 nos. 30 marks max. & 30 mints.

Part B

Short Answer

type questions 10 nos. 50 marks max. & 120 mints.

Part C

Long Answer

type questions 1 no. 20 marks max. & 30 mints.

Total	41	100 marks	180 mints.
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There may be variations in the number of questions, marks allotted and times set apart, in respect of certain other subjects. The method proposed can be still applied in all such cases.

Parts A, B, & C are to be answered by students separately and marked or graded by examiner's also separately.

It is suggested that Part A be marked with respect to marks and Part B and Part C question wise graded. This is because Part A consists of items which have *one and only one predetermined correct* answer and that a student's answer to an item is either *right* or *wrong* and further that he can be given either 1 or 0 mark accordingly. Let us take that all answers of all students to Part A be marked and assembled and certain Statistical Calculations be done quickly namely Mean of Marks, Standard Deviation. It is also possible to analyse for each item; its facility value and discrimination index. Similarly, Part B, grading questionwise can be adopted, as well for Part C.

*Project Officer (Exams.), AIU

A typical student may return the following:

Part A :

Item No.:

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

Mark Obtained:

1 0 1 1 0 1 1 1 0 1 0 1 1 0 1 1 1 1 1 1 0 1 1 0 1 0 0 1 1 1

*total 21/30

Part B :

Question No.	1	2	3	4	5	6	7	8	9	10
Marks/Grades Obtained	0	A	A	B	A	B	B	C	B	B

*Questions are all of equal weight

Part C :

Question No.	1
Grade awarded	B

The question is 'what is the overall grade to this student in Parts A, B, and C put together'?

'What is the grade point average'?

'What are the relative weights of these Parts?

Part A : The student has obtained 21/30. This means that a grade is to be allotted to this mark. In order to do this, let us take that the full range 0-30 marks is made use of and that the Mean, Standard Deviation are calculated from the marks in *Part A* of all students. This is likely to be around 15 from Mean and about 4 marks from Standard Deviation. Even of the reliability of this Part is around 0.9, the SEM is $0.3 \times 4 = 1.2$ marks.

A conversion from marks to grades to this

Part A can be:

27 and above	0 outstanding
24—26	A very good
21—23	B good
18—20	C average
15—17	D below average
12—14	E poor
12	F very poor

On this basis, the student (21/30) obtains a B. An alternative (equally good) will be to mark all students Part A and arrange them in a rank order: the top 3% may be given an 0; the next 7% an A and so on.

3%	0 outstanding
7%	A very good
22%	B good
36%	C average
22%	D below average
7%	E poor
3%	F very poor

This is particularly useful when dealing with *large numbers* and also scripts have been *randomized*. It is very likely that this student will obtain B here also.

Part B :

The same student obtains questionwise grades as follows:

Question No.	1	2	3	4	5	6	7	8	9	10
Grade Obtained:	0	A	A	B	A	B	B	C	B	B

The overall grade poor average from Part B is $\frac{6+5+5+4+5+4+4+3+4+4}{10} = \frac{44}{10} = 4.40$ —B.

Part C : The student has obtained a B already by direct grading. It may be necessary to combine the grades individually obtained in Parts A, B and C into an *overall grade* for the student.

Overall Grade Calculation:

The student under consideration obtained in Part A 21/30 this on conversion because a B: in Part B an overall grade of B (4.40) and a grade of B in Part C.

It is usual to take the relative weightages of Part A, Part B and Part C to be dependent on the maximum marks of these Parts i.e. 30:50:20. If one wants to get the time weightages of these parts taking into consideration the ranges of mark-grade in these, then they can be calculated as suggested by Nuttall.

This method of course will require all parts to be marked and standard deviations of all individual parts obtained:

Weightages of one part = $\frac{\text{Standard deviation of that part} \times 100}{\text{Sum of the standard deviation of all parts}}$

Let us take the weightages to be 3:5:2 for these parts A, B and C.

Then the overall grade poor average is

$$\frac{3 \times 4.0 + 5 \times 4.40 + 2 \times 4.0}{10} = \frac{12 + 22 + 8}{10} = \frac{42}{10} = 4.20(\text{B})$$

Conclusions

In calculating the overall grade in an examination paper having a restructured pattern of Part A objective type items, Part B short answer questions and Part C long answer questions, Part B and Part C are straight forward while Part A needs certain interpretations. In this paper an attempt is made to give one possible interpretation and convert marks to grades in Part A. An advantage of this method is that this can be applied to any combination of Part A, Part B and Part C.

Status of Women in Society

The convocation of the S.N.D.T. Women's University this year was delivered by Professor S. Nurul Hasan. The status of women in our society is being rapidly raised. The inequalities between men and women are being quickly narrowed down and women are beginning to play a role of ever-increasing significance in social, economic political spheres. In a dynamic social context of this type, all institutions for the education of women must continually re-appraise their roles and programmes and adjust them to the changing social situations and evolving national objectives.

One of the most significant developments in modern India has been the spread of education among women and the improvement in their social status. At the beginning of the nineteenth century, women had hardly any access to formal education and their social status was extremely unsatisfactory. Tremendous cha-

and are a key indicator of the modernisation of the Indian society.

In spite of these achievements we cannot ignore the several weak spots that exist in the situation. To begin with, three women out of four are still illiterate. Only six girls are enrolled in primary schools for every ten boys. Wastage rates among girls are larger than those among boys so that there is only one girl for every three boys in secondary schools and only one girl for every four boys in higher education. The secondary and higher education of women is still largely an urban affair and restricted mostly to the upper and middle classes. The social status of women remains unequal and subordinate in several matters in spite of all legislation to the contrary especially because the traditional attitudes of male domination, so characteristic of a paternalistic society, refuse to die out. Even well-meant legis-

prevent concepts of this complementarity and the stereo-types of men and women to which they lead, from giving a dominant position to men and a subordinate position to women? What is the precise connotation of the expression: equality of the sexes? In the west, this search for equality has often resulted to women abandoning some of their finest roles and aping the weaker roles and characteristics of men instead. This 'women's lib' movement has been rightly rejected in our country and finds little favour with enlightened Indian women. But what is the alternative expression of equality that we can project and is consistent with our cultural milieu? Which of our traditions are in keeping with the concept of equality of women and need to be preserved and which are against it and need to be rebelled against? What are the changes needed in our social institutions to give equality, justice, freedom and dignity to women? These and other related questions are extremely important and we have to find satisfactory answers to them. The vast programme of re-educating men and women to a proper appreciation of themselves and of their relationship to one another depends entirely on these answers. It is therefore of crucial importance that we should have a few high level institutions which will continually address themselves to this basic and fundamental thinking. This is a task which the university should undertake and it should provide a leadership and guidance to other institutions working in the field.

The second role which the university should adopt is that of a watch-dog and relates to the continuous monitoring of relevant data and periodical evaluation of the programmes being implemented by the Central and State Governments and other agencies to improve the status of women. Ours has been a hierarchical and inegalitarian society for thousands of years and the roots of social inequality go very deep in our midst because they

Convocations

nges have taken place since then and more so after the attainment of independence. Today the total enrolment of girls in all educational institutions is more than forty million. This movement was strengthened by the labours of thousands of social workers both men and women and especially by the participation of women in the national struggle for freedom under the leadership of Mahatma Gandhi and Jawaharlal Nehru. The constitution gave equal status to women in all matters including voting rights. They have, on the whole, attained greater economic independence, child marriages have disappeared and double standards in marriage and divorce are on the way out. In fact, the improvement in the education and status of women stand out as the most important achievements of our renaissance

lation like divorce laws often works out to the detriment of women in real life. The various aspects of this unhappy situation have been highlighted by the **Committee on the Status of Women in India**. A careful perusal of the report will show that we still have a long way to go if we desire to convert the *de jure* equality which the constitution confers on women into a *de facto* one.

In a situation of this type, what is the role of an institution like the SNDT University which is exclusively devoted to the education of women. The first and probably the most significant role is that of a thinker and relates to conceptualization. What are the proper roles of women in society and how are they related to those of men? The complementarity of their roles is universally agreed but how can we

have been sanctified and legitimized by religion and philosophy. The struggle to create a new social order based on freedom, equality, justice and dignity of the individual is therefore far from easy and the inequality between the sexes, which is the most deep-rooted of all inequalities, will probably be the last inequality to disappear. Under these circumstances, we need several institutions which will play the role of a watch-dog and strive continuously to interpret social changes to determine what precisely is happening to the status of women and whether women are moving towards equality or away from it.

The third important role is that of extension which will enable you to reach out to that large mass of women who lie outside the scope of all our educational efforts at the moment. But by its very nature, the university like this can reach out only to a limited social group and as things stand at present your alumni come mostly from the upper and middle classes in the urban areas. Social group was justified and even necessary in the past when education among women was extremely limited, one sees little justification for the continuation of that policy in the years ahead. Today we have a curious situation in our midst. The women who are receiving secondary and higher education form only about five per cent of the corresponding age-group and come mostly from urban areas and the upper and middle classes. They are being driven to seek employment for financial reasons. But they all want to continue to work in urban areas only and also want white-collar jobs. Quite obviously such jobs are few and as competition from men is also becoming more intense, unemployment and frustration is growing among educated women. On the other hand, large numbers of women are required as teachers, doctors, nurses, midwives, industrial entrepreneurs etc. to work for the uplift of the vast mass of uneducated women in urban and rural

areas. But no such workers are available so that the lot of these women continues to be miserable. This situation of simultaneous coexistence of unemployment among educated women on the one hand and dearth of social workers to ameliorate the condition of mass women on the other is almost tragic and cannot be allowed to continue. We must develop a two-fold programme to remedy this situation. Our recruitment rules and employment policies should be changed to suit the needs of women who have certain unavoidable family responsibilities. Part-time employment, for instance, should be adopted on a large scale and it should be adequately remunerated on the same basis as full-time employment. There should be an earnest effort to utilise the talents and energies of educated housewives for community service in their neighbourhoods and so on. Side by side, educational institutions should develop large scale programmes of extension and social service, involving their teachers and students. They should establish contacts with the women of the poor and lower classes in the community around and organise extension work and social service programmes in education, health, child welfare, family planning and development of vocational skills to increase earning capacity. This extension work can be advantageously developed through and side by side with programmes of literacy and non-formal education. These activities can help us to bridge the gulf between the educated and the uneducated women.

The fourth role is that of making women basically free and is related to the spread of science and technology in society. Women, by their very biological structure, have been handicapped by the responsibility to bear children and this deprives them of considerable freedom if child birth is uncontrolled. Over the ages we have also created social structures which confine women to the home and fill their lives with endless domestic chores which

entail untold drudgery. Women have thus become culinary and sexual conveniences for men and lost their freedom through the compulsory burdens of house-making and child-rearing. In modern times, they have been reduced from both these handicaps by science and technology. On the other hand science and technology have introduced ready-made foods, kitchen gadgets, washing machines, vacuum cleaners and other culinary and domestic conveniences which have reduced the drudgery of home-making. For that very reason men have also begun to share it, thus reducing a woman's drudgery further. Similarly, science and technology have taught and enabled women to control child birth and saved them from the drudgery involved in mothering child after child.

The fifth important role is that of communication and is related to the spread of relevant knowledge among all the men and women in this country. The traditional ideas of the inequality of the sexes are ingrained in each individual in the very process of socialization. Some university centres should devise suitable materials for the use in schools and non-formal programmes and teachers trained in an appropriate fashion. To bring about a strong effort both in the formal educational system and through non-formal channels men and women have to believe in the equality of sexes and to practise it.

We need a vast nation-wide movement to spread education among women and to improve their status—a movement which will involve millions of educated men and women.

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Liberalised UGC assistance for women colleges

Prof. Satish Chandra, Chairman of the University Grants Commission delivered the convocation address of the Jammu University. He emphasised the need for allocation of more funds on education. He said that from the point of view of expenditure on education the position was fairly low. Comparing to other countries, India has the third largest trained scientific manpower but in expenditure on education, in terms of GNP, the country is below Sri Lanka, Malaysia and Nigeria. It did not necessarily mean that our education standards were low as our scientists and teachers are welcome in foreign countries especially in West Asia, Africa and even in Europe and United States.

The University Grants Commission has recently relaxed its rules to extend its assistance on buildings, books and faculty to more women colleges on a scale similar to those applicable to colleges in backward areas. Now colleges with the minimum enrolment of 300 students instead of 400 in the three-year degree pattern would become eligible for assistance on buildings, books, equipment and faculty improvement. Similarly in the case of two-year degree course the minimum enrolment required has been reduced from 270 to 200.

Tope emphasises need for open university

Prof. T. K. Tope, while delivering the special convocation of the University of Bombay said that the cost of higher education has been rising rapidly during the last decade with the result that the funds available for meeting the requirements of higher education are very inadequate. Even the American and British universities have similar complaints. Higher education was now facing chal-

lenges all over the world. In India barring a few central universities all other universities in the States were facing financial crisis.

Prof. Tope emphasised the need for finding alternative resources for meeting the requirements of higher education and suggested that a substantial percentage of the net proceeds of professional taxes be earmarked for meeting the needs of higher education. Those who had the privilege of having received higher education should plough back some share to the universities and colleges in the form of professional taxes. The State Government should consider the desirability of earmarking such funds. The Vice-Chancellor also suggested that the University Grants Commission should adopt the policy of refusing permission for the establishment of new universities unless absolutely necessary and also strengthen the existing universities. He said that the university should also refuse affiliation to colleges unless necessary. For the backward areas, correspondence courses should be arranged and the colleges could have centres in neighbouring rural areas where there were a suitable number of students. He also emphasised the need for a national open university with centres in all States. The recent inclusion of education in the concurrent list has placed special responsibility on the Union Government for higher education.

Universal primary education

Shri J. P. Naik, Member Secretary of the Indian Council of Social Science Research while delivering the annual convocation of Poona University suggested a five-point programme of action to solve the problem of universal elementary education on a war footing by 1986. The programme of universal elementary education for children in the age group of six to fourteen was still not making

adequate progress and it deserved an alternative approach for effective implementation. He felt it necessary to make a beginning at once by modifying the formal system of education with the introduction of multiple-entry and part-time schools and use of non-professional teachers. He recommended a total change in the content and methodology of elementary education and development of the whole programme as a mass movement. He suggested that large scale experiments should be started in not less than two community development blocks in each district. The educational system should maintain a contact with each child in the age of 6-14 either on a full time or on a part time basis. Mr. Naik said that the elementary education should be built not round mere transmission of inert knowledge but round work experience and programmes of development and community service. Education and development should run together as a single integrated system-education leading to development and development leading to further and better education.

PANJAB UNIVERSITY (CHANDIGARH)

The Panjab University Centre for Advanced Study in Mathematics will be appointing a number of Mathematicians at various levels in the near future. First rate Mathematicians working in every field will be considered. However, there will be an attempt to strengthen the existing groups of Algebra and Analysis, especially by those people, who could interact with the Number Theorists and Applied Mathematicians of the Department. Those interested may write to the undersigned for further details.

R.P. Bambah
Director

Centre for Advanced Study
in Maths.

Teaching of English in Universities

A three-day national workshop on syllabus reform in English was held at the Central Institute of English & Foreign Languages, Hyderabad under the sponsorship of the University Grants Commission. Prof. Satish Chandra, Chairman of the Commission could not attend the seminar, but his inaugural address was read on his behalf. He made a strong plea for evolving national consensus on the objective of English language and literature courses both at the undergraduate and postgraduate levels. He assured that the Commission would provide support for the innovative programmes but felt that universities and colleges have been slow in availing these opportunities. He said that at this crucial period in the history of the country one important area where we could least afford stagnation or a policy of drift was education. A certain structure and philosophy of higher education came to us as a legacy of the colonial rule. But the development of higher education in India since independence had effected many changes. A policy oriented towards the needs of the resurgent and developing nation has been worked out. Modernisation of syllabus is an important phase of the implementation of this policy. A periodic review of the syllabus and academic programmes have to be made to ensure that the content of our education kept pace with the advancement of knowledge. The academic community has to be alert all the time and out-moded syllabus have to be discarded. In this context the national workshop was a part of this general effort. Similar workshops have already been organised at Mysore, Bombay, Lucknow and Shillong.

Prof. Satish Chandra said that English was still the language of opportunity. It was also the language of our trade. Good jobs in all fields called primarily for efficient communication skills in

English. Therefore equipping our students with these skills should be the primary objective of our English courses in the universities. This apart, English continued to be a source language at the level of higher education. The students of science and technology and that of social sciences and humanities required knowledge of English to be able to read books in their specialised fields readily available only in English. Our students should be enabled to acquire in using English as a library. They should also be equipped with communication skills in English. He said that the Commission has already appointed a panel of experts in English and foreign languages to advise it on all matters pertaining to the development of academic programmes. The faculty improvement programme too had been initiated and the Commission was fairly liberal in awarding teacher fellowship under the programme to English teachers. He hoped that the Departments of English in universities and colleges would make maximum use of these facilities.

Mr. P. Jaganmohan Reddy, Vice-Chancellor of Osmania University who presided at the seminar said that there are no two opinions on the need for English as an important link language. English has been serving us as a link language and is a national asset which should not for any ideological or misconceived regional or chauvenistic reasons be denigrated or neglected. For historical reasons in our country other languages had not kept pace with scientific and technological developments. This was due to the fact that India had not been in contemporaneous touch with the Industrial Revolution. Mr. Reddy

said that instruction through the mother tongue provided greater comprehension to the students and that along with such instruction, the student could also learn English which if properly taught would make him as proficient in it as in his mother tongue. He emphasised the need to concentrate on the training of English language at all levels, though it was also necessary to train teachers qualified in science, agriculture and technology. Two objectives should always be borne in mind. One to ensure that English would really become a service language for students, to promote intellectual and cultural awareness of the contemporary world and to provide information content necessary for modernisation of the country.

Prof. Ramesh Mohan, Director of the Institute, in his welcome address said that in order to avoid the continuance of a small privileged English knowing elite in the country, steps should be devised to teach English effectively to large number of students belonging to the backward classes and weaker sections. Referring to the problem of teaching literature, Prof. Mohan pointed out that we are still largely continuing with outmoded syllabuses of the British universities in the nineteenth century. The scope of English literature courses at the M.A. level in many universities had been widened to include American literature in English and Indian writing in English. But he was hardly aware of any serious attempt to include at least one paper in the literature in one of the regional languages, a knowledge of which would provide the student with a sound base for the proper study of other literatures. He emphasised the need for making the postgraduate syllabus in English more flexible and that admission to this programme should be restricted only to those who had the requisite competence in the English language.

Madurai introduces new programmes

The Academic Council of Madurai University has approved the introduction of a number of new courses at postgraduate and undergraduate levels. The BSc Home Science course would be made job-oriented with particular relevance to nutrition, institutional management, dietetics, child care and pre-school education. The music study has been brought under the semester system. The new courses include MA (Economics) in the institute of correspondence course, MSc applied science in mathematics, physics and chemistry, MA course in sociology and political science, MPhil in sociology and political science, higher diploma courses in Russian, French and German, P. G. diploma courses in applied nutrition and public health and in pre-school education, diploma courses in Nehru studies, area studies, dairy science and

open university system in the university would start functioning from the coming academic year. The Vice-Chancellor said that a detailed programme with syllabus for the pre-foundation course and the first and second year course have already been worked out. Dr. Bryant Lewis of the Open University of the United Kingdom and Mr. Peter Moss of the British Council of Education at Madras recently visited Madurai to help the university authorities to prepare the ground work of the open university programme.

Flame-proofing of cotton fabrics

Prof. H. L. Bhatnagar of the Chemistry Department of Kurukshetra University has succeeded in achieving a breakthrough in the field of flame-proofing of cotton fabrics, specially for the use of defence personnel and for

has a peculiar odour which can be detected even in minute quantities. All this helps a housewife in detecting an accidental fire almost instantaneously.

The treatment of 7-10 oz drills, mostly used by the defence personnel, fire brigade personnel and in mining, has received a little more attention for obvious reasons. About 100 metres of drill cloth was treated on the usual finishing plant-famatax-at the T.I.T., Bhiwani. The treated cloth was tested in the laboratories of the Chemistry Department of the university and also at D.M.S.R.D.E., Kanpur, and also at Southern Regional Research Laboratories, Agricultural Research Service, New Orleans, USA. The test reports show that the samples are generally acceptable as regards their specific properties laid down by the American Standard of Testing Materials.

Continued modernisation of courses in Madras

The move of the Madras University to restructure its undergraduate courses has made a good impact. The launching of the new educational pattern would give the university another opportunity to modernise its undergraduate courses and adopt them to the national requirements. Dr. Malcolm Adiseshiah while speaking at a meeting of the college principals said that tentative proposals have been sent to the colleges for comments. A 32-member review committee had been appointed earlier which had suggested drastic modifications and restructuring of the courses. The recommendations are likely to be effected from the session 1980.

The Vice-Chancellor said that the aim of new degree courses should be to produce intelligent reasoning and employable persons. They also had to take a note of the fact that 90% of the graduates terminated their studies and only 10% went on the postgraduate and professional courses.

CAMPUS NEWS

certificate courses in population studies (part-time). The university has also decided to run two summer courses in MPhil for college teachers.

Prof Chittibabu said that the Tamil Nadu Government has approved the proposal of the university to set up a Tamil Academy for honouring one outstanding Tamil savant every year by conferring a fellowship on him and making him a member of the Academy. The Government has also agreed to reimburse to the university the expenditure incurred for this purpose subject to the ceiling of Rs. 15,000 per annum. Dr. T. P. Menakshisundaram and Mr. P. N. Appuswamy who have already been conferred the fellowship of the Madurai University Tamil Academy are to be admitted to the life membership of the University Academic Council. The university has set up a committee to make a critical survey of its postgraduate courses in colleges. The proposed

children wear. The finished cloth developed in the laboratory becomes proof flame and does not catch fire at the point of application of flame. But it does not propagate the flame at untreated cotton fabrics and retains all its other important properties like air permeability, tear, tensile strength and dye retention intact. The cloth can be laundered without losing its flame retardancy for more than thirty times. It is also capable of standing drastic test, namely, three hours soap-soda boil. The finishing also imparts crease recovery and water repellancy. The soft flannel cloth generally used for making childrens' garments retains its softness after treatment and also takes up salt dyes imparting sparkling colours. Another important aspect of the treated samples is their smoke generation and lack of after-glow. The generated smoke even in small quantities

Dr. Malcolm referred to the controversial part of the university proposal on restructuring which related to reducing the language load in the degree courses. Under the new pattern each language would be allotted two hours a week in the first and second semesters. The general reaction to this proposal was that it would tell on the students' proficiency in the languages and also render many language teachers surplus. Dr. Malcolm said that it was necessary to increase the teaching hours for the languages. The classes should be made smaller and more effective as suggested by the Academic Council.

Reasons for deficiency in sports

Dr. M.S. Malhotra, Director of Defence Institute of Physiology, analysed the reasons for the poor performance in the field of sports. He said that nutrition, climate and training were the three fundamental requirements for the production of good sportsmen. The racial factor was of little significance while the other factors were within the human control. Muscle strength, according to him, predominantly influences performance in weightlifting, throwing and jumping events. Efficient energy supply processes play a greater role in all the running and endurance events including games while neuro-muscular coordination was essential for all types of competitive sports. Age, sex, physical fitness and status were the factors which influenced the oxygen supply. Dr. Malhotra was of the opinion that through proper training and physical control the oxygen uptake capacity can be increased. He mentioned various factors in this context. Maximum capacity for breathing air during exercise, speed of transfer of oxygen from lungs to blood and carbon dioxide from blood to lungs haemoglobin content of blood and its volume, efficiency of heart in pumping large quantities of blood per beat, capacity for transfer of oxygen to the

working muscles, rate of utilization of oxygen by the tissues and higher storage capacity of oxygen in the muscles. Dr. Malhotra in his address to the students of Punjabi University at Patiala made a strong plea for the involvement of the youth in the sports activities.

PAU kisan mela attracts large number of farmers

Over 8000 farmers from all parts of Punjab assembled at the two-day annual kisan mela of Punjab Agricultural University at Ludhiana. The mela was inaugurated by Mr. S. P. Bagla, Secretary, Finance Department. Seeds of improved varieties like rice, maize, cotton, bajra were displayed, and nearly ten thousand bags of seeds of different sizes were distributed on this occasion.

Dr. A. S. Cheema, Vice-Chancellor of PAU said that the growing number of participating farmers in this mela show that green and white revolution taking place in the state were bound to play vital role in solving country's food problems. He said that more than 4,500 crosses in wheat have been made by the university scientists during the current year. Object of such crosses was to test about high yielding varieties potentials, resistance of diseases particularly rust and grains quality from the nutritional point of view. To achieve this goal they created large number of breeding materials. Other highlights of the mela were that soil scientists who were attending to farmers in their own separate demonstration areas emphasised the danger of growing deficiency in their soils. They also explained to visiting farmers ways of reclamation of alkali soil and methods of preserving soils moistures. They advised the farmers to abandon raised bed methods of nursery raising popularly known as Japanese method which has been in vogue since early fifties. Timely warning was issued to the farmers against pernicious weed called perthenlum which was noticed for the first time in September. In animal sciences depart-

ment two strains of white leghorn were developed during the year. Farmers showed keen interest in crossbreed cows produced by mating shaiwal cows with red dane bulls which have given daily yield of more than 30 litres.

Programme of NSS in southern universities

During the current year over 17,000 students from Madras, Madurai and Annamalai Universities would visit the villages through the summer camps to bring better life to the villages near their respective colleges. The national sports service authorities are organising various camps on the basis of last year's achievements in this field.

The University of Madras proposes to involve 10,000 students from its affiliated colleges in these projects. The community leaders in the respective regions are being contacted for finalising the various schemes. The camps have been planned in terms of students community resources and projects would be developed in assorted villages and slums areas which were near the institutions themselves. The proximity of the colleges have been underlined since there should be a continuity of students efforts in bringing improvement to the whole village, bringing about an attitudinal change and creating durable assets in a period of two or three years. In the Madras University area there were 120 villages which have been adopted by various colleges.

Another idea was to expose the students to the rural realities and at the same time making it an educational exercise of an on-going nature bringing to the fore potential youth leaders. The main areas of the project will be land reforms, non-formal education and recreation, better environment afforestation and tree plantation, economic development and family and child care, relief to the erstwhile bonded workers, teaching improved agricultural practices, laying of roads, village streets and drains, soil conservation

works, assistance in the repair of agricultural machinery and mass immunisation. These camps would be in the nature of work oriented plan than a mere plan of manual labour. Similar programmes would also be organised in Andhra Pradesh, Karnataka, Kerala and Pondicherry.

Seminar on Non-alignment held at Tirupati

Sri Venkateswara University, Tirupati, organised a national seminar on non-alignment, under the joint auspices of the Centre of Studies in Peace and Non-Violence and the Centre for Studies on Indo-China. Shri T.N. Kaul former President, Indian Council for Cultural Relations, inaugurated the seminar. The focus of the seminar was on non-alignment—the concept and its evolution, non-alignment and international law, non-alignment and economic, social, scientific and technological cooperation and non-alignment and world peace. A large number of distinguished scholars participated in the discussions. Implications of non-alignment in different fields were analysed and projected in the proper perspective.

Semesterisation Programmes in Madras

Dr. Malcolm Adiseshiah has said that the semesterisation programme had been widely welcome by the members, staff and students of the colleges of University of Madras. He has assured the principals that the system would cover all colleges in about two years time. The university has also started negotiations with the State Government for the provision of necessary financial aid to make good the deficit of colleges which would run into several lakhs.

The Syndicate of the University has decided to raise the examination fees to provide an additional Rs. 25 lakhs on the

advice of the State Government. During the year the university had given special attention to non-formal education, semester programme, the national student scheme, the academic excellence programme and the university students information bureau.

New Pay-Committee to consider demands of non-teaching employees in Bengal

The threatened strike of over 8,000 non-teaching employees of the universities in West Bengal which was to begin from 18th April, 1977 has been averted for the present. The State Government has announced the appointment of a first pay committee. The Committee is likely to keep in view the cost of implementation and advise the government within the coming six months.

The terms of reference of the committee would be:

1. to bring about a rationalisation of pay-scales and to consider merging of dearness allowance with basic-pay;
2. to explore the possibilities of introducing new or intermediate selection grade on the lines of those adopted by the Government;
3. to suggest a rational staffing pattern;
4. to inquire into every incidental matters and suggest removal of anomalies, if any.

The Government took this decision after the Education Minister had met with the representatives of the university employees, students organisations and some Vice-Chancellors in Calcutta. This announcement in a way has virtually scrapped the P.B. Mukherjee pay-scales over which the non-teaching employees had been agitating since long.

The Minister has appealed that the examination schedules including publication of results should

not be disturbed. In all colleges which have furnished the necessary particulars, the new UGC scales had been implemented and a sum of Rs.2.25 crores has already been disbursed during the last financial year on this account. The final pay fixation is a formality which can be gone through after scrutiny of the necessary particulars of service etc. to be submitted by the institutions concerned. The Minister further suggested that the Government could take up some form of salary deficit scheme if the teacher came forward to cooperate with the authorities.

UGC assistance for book on Tribal Culture

Prof. L. P. Vidyarathi, President of International Union of Anthropological and Ethnological Sciences and Dr. B. K. Rai have jointly authored a book on tribal culture under the quality book writing programme of the University Grants Commission. The book provides for the first time a comprehensive view of the tribal culture in India.

Better assistance for weaker students in Tamil Nadu

The Tamil Nadu Government has changed the system of payment of scholarships. Now onwards instead of making cash payments to students belonging to scheduled castes/scheduled tribes backward classes and denotified tribes studying in school and colleges, they will be supplied with books at the beginning of each academic year and would be exempted from payment of special fees and examination fees. Hitherto, the Harijan and Tribal Welfare and Backward classes departments have been sanctioning the scholarships to students to cover the cost of books, special fees and examination fees. The benefit reached only to those who applied for it. Also the procedure involved resulted in considerable delay in

the disbursement of scholarship amount. Considering these disadvantages and with a view to covering a larger number of students the Government has decided to supply books to the eligible students at the beginning of each academic year and exempt them from the payment of fees, etc.

Vallabh Vidyannagar sets up language laboratory

H. M. Patel Institute of English, Vallabh Vidyannagar, prepares teachers and teacher-trainers to build a cadre of trained teachers of English for whole of Gujarat State. Research into local problems of the region is also conducted. The institute in addition prepares sets of materials to be used in schools and colleges and seeks to improve the standard of English teaching. The overall instructional objective of the Institute courses is for trainees to become proficient teachers of English by acquiring a rationale for thinking about and consistently resolving problems of curriculum and instruction in English as a foreign language and the ability to apply this rationale in planning and teaching English courses and preparing materials in schools and colleges. The institute is a part of Sardar Patel University and is one of its recognised institutions for graduate and postgraduate studies. The five departments of Linguistics and Contemporary Usage, Phonetics and Spoken English, Methods of Teaching English, Literary Studies and Education & Educational Psychology offer MEd, BEd (English) and BA, BEd (English) courses for teachers. Besides these courses the institute also organises senior certificate course in English and short-term inservice training courses for primary teachers.

The language laboratory of the institute is well organised. It has an audio-active laboratory with sophisticated auxiliary recording equipment of several kinds

including a ferrograph and a library of prepared tapes, cassettes and records which can be used for speech-training and language teaching. There are also films and other audio-aids of various kinds. Using the language laboratory the institute has designed specialised programmed courses in English for special purpose. At present courses for English in Physical Science, English in Mechanical Engineering, English in Commerce and English in Sociology have been designed. The institute has teacher's centres dispersed throughout the State of Gujarat. Regular seminars and workshops are organised by the institute in different subjects. These help in creating awareness in day-to-day problems and in planning to meet actual needs of learners in a practical manner. The language laboratory was inaugurated by Dr. Ramesh Mohan, Director, Central Institute of English and Foreign Languages recently. This is the first 200 booth, audio-active language laboratory manufactured and installed by Bharat Electronics Ltd., Bangalore, in the country.

Number of summer camps for Gujarat students

The Gujarat University would conduct mountaineering camps for students during summer vacations at Mount Abu. About 150 students are selected for the camps, two each for men and one for women. Already about 750 students from 80 colleges affiliated to the university have applied for these courses which have become more popular.

The university will also organise Himalayan trekking camps for men and women in the month of June. About 20 students will be selected for each camp. Another trekking trip from Chanod to Broach along the banks of Narmada would be planned during the vacations. The university is also proposing to organise another camp in the month of May at the university campus to inculcate

scientific reading practices in students. The department of sociology would conduct a camp for the benefit of students preparing for the IAS and central examinations.

New courses at Annamalai

The Annamalai University has decided to introduce a part-time MSc course in Microbiology and Plant Protection from the next academic session. The university also proposes to institute one-year Master of Higher Education course from the next year. The semester system would also be introduced shortly in various postgraduate programmes of the university.

Rajasthan sports grants

The Rajasthan Government has allocated a sum of Rs. 23.80 lakhs for the improvement of sports and games in the State. Out of this sum the State Sports Council will get Rs. 15.61 lakhs as grant-in-aid. A sum of Rs. 2.50 lakhs has been earmarked for rural sports. Though no special provision has been made for schools in tribal areas nor for oriental colleges, the secondary schools for girls have been provided with Rs. 33,000 while the boys schools will get Rs. 2.45 lakhs as grant-in-aid.

UN recognition for communication centres

The Indian Institute of Mass Communication in New Delhi and the Poona Film and Television Institute have been recognised as two national centres for the training in mass communication by the Unesco's commission on mass media at its meeting held in Nairobi. The institutes currently cater to the requirements of twentyseven developing countries.

Personal

1. Dr. D. P. Singh has taken over as the Vice-Chancellor of Rajendra Agricultural University, Smastipur.
2. Mr. T. V. Chidambaram has retired as the Registrar of Bombay University on April 1, 1977.

THESES OF THE MONTH

A list of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Biochemistry

1. Agashe, S.S. Immunological studies on human tumors with special reference to Osteogenic sarcoma. University of Bombay.
2. Ananthakrishnan, Radha. Control mechanism in RNA biosynthesis. University of Bombay.
3. Choksey, A.F. Optical, ultrastructural and electron histochemical aspects of human breast cancer. University of Bombay.
4. Choudhari, Patru Nathu. Effect of katha, *Acacia catechu* on high cholesterol diet in rats. Nagpur University.
5. Dhar, Alpina. Nature, composition and synthesis of lipid in germinating seeds of soybean, *glycine max*. University of Calcutta.
6. Handa, A. K. Regulation of chloronema differentiation in the mass funaria *hygrometrica* by adenosine 3' 5' —cyclic monophosphate. University of Bombay.
7. Irani, M. H. Genetic and biochemical studies in carbohydrate metabolism in *Escherichia coli* : Glycolysis. University of Bombay.
8. Kundu, Asitbaran. Biochemical studies on rice plant with special reference to photosynthesis. University of Calcutta.
9. Lalitha, N. Biochemical evaluation of antitumor agents. University of Madras.
10. Mohana, B. Biochemical genetical studies on pyridoxineless mutants. University of Madras.
11. Ram, Gulab Chandra. Metabolism of liver phospholipids in retinol fed rats. University of Delhi.
12. Ranganathan, N. S. Biochemical polymorphism : Studies on the incidence of glucose-6-phosphate dehydrogenase deficiency and some related factors. University of Madras.
13. Rangnekar, M. K. A study of the effects of Indian medicinal plants in experimental hepatic injury in rats. University of Bombay.
14. Sarkar, Lina. Isolation, characterization and biochemical studies of the antithiamine factor present in cotton seed, *Bombax male bericum*. University of Calcutta.
15. Sharma, Kameshwar Prasad. Role of sugar-nucleotides in carbohydrate metabolism in developing grains of *Sorghum vulgare* and *Triticale*. Punjab Agricultural University.
16. Sheriff, D. Sultan. Hormonal influence on testicular lipids. University of Madras.
17. Sridharan, R. Histone biosynthesis during mammalian differentiations. University of Bombay.
18. Vishnu Prakash. Studies on polyamine metabolism during germination of pea seeds. M. S. University of Baroda.

Microbiology

1. Bhidey, S. K. Role of carriers and non-agglutinable vibrios in cholera. University of Bombay.
2. Mansharamani, H. J. Rubella infections in Bombay with some laboratory studies. University of Bombay.
3. Sharma, Chhottoo Ram. Studies on the phages infecting blue green algae. I. A. R. I., Delhi.

Botany

1. Agarwal, Harish Chandra. Nutritional physiology of *Trichothecium roseum* (Pers.) Link. ex Fries. University of Jabalpur.
2. Chattopadhyay, Asih. Photosynthesis and productivity of rice plant in relation to growth substances. University of Calcutta.
3. Correa, N. M. Morphological, anatomical and in-vitro studies of certain members of ferns. University of Bombay.
4. Leelavathi, A. Epidermal studies in the leguminosae. Osmania University.
5. Mehta, Usha. Development of scotch marigold, *Calendula officinalis* L. and its modification by some plant growth regulators. University of Delhi.
6. Pal, Amita. Chromosome studies and chemical analysis of some medicinal species with special reference to the genus *dioscorea*. University of Calcutta.
7. Pal, Rabindranarayan. Taxonomical study of Theaceae actinidiaceae and Saurauiceae of India and Burma. University of Calcutta.
8. Peter, Sargunam Davis. Studies on species crosses of *Gossypium*. Tamil Nadu University.
9. Prasanna Kumari, T. O. The factors affecting the development of rust fungi of wheat in detached leaf culture and their interaction with wheat mosaic streak virus. University of Kerala.
10. Purohit, Ramesh Chander. The autecological studies of *Euphorbia geniculata* Orteg. infesting crops at Indore. Indore University.
11. Sehgal, Anita. Some aspects of the developmental biology of *Ceratophyllum*. University of Delhi.
12. Sharma, Mahesh C. Oxygen effect in relation to chemical modification of the radiosensitivity of barley seed. Jawaharlal Nehru University.
13. Subramanayam, N. Contribution to vegetative anatomy of some epiphytic orchids. University of Bombay.
14. Vaidya A. L. Contributions to the Botany of Marathwada III. Marathwada University.

Zoology

1. Abdul Haq, M. Studies on the taxonomy, biology and ecology of oribated mites. University of Kerala.
2. Adeesan, Chellam. Sex pheromones in insect reproduction. University of Bombay.
3. Agrawal, Durga Prasad. Histochemical and cytological studies on the adipose tissue of insects with special reference to water vacuoles, peripheral globules, lipids and proteins. University of Saugar.
4. Bagalkote, S. G. Studies on some physiological aspects of the Indian domestic fowl (Desi fowl) *Gallus domesticus*. University of Bombay.
5. Das, Swapankumar. Some aspects of the digestive physiology of a leafhopper, *Nephotettix bipunctatus* Fabr. (Homoptera : Jassidae). University of Calcutta.

6. Dikshitulu, A. V. Ramana. Some aspects of enzyme regulation in goat liver homogenates with special reference to ammonia metabolism. Sri Venkateswara University.

7. Dwivedi, Devendra Kumar. Studies on the colour-change mechanism in a fresh-water fish. University of Saugar.

8. Misra, Manas Kumar. Population study of nematodes from the lateritic soil of gullies at Santiniketan, West Bengal Visva-Bharati.

9. Ray, Ajay Kumar. Studies on the developmental morphology and cytochemistry of the female reproductive system in *Bufo melanostictus* Schneider. Visva-Bharati.

10. Rita Singh. Physiology of the epididymis and ductus deferens of the albino rat during post-natal development. University of Delhi.

11. Sokhey, Apar. Histological and ultrastructural studies of parenchymal changes in the lungs of rats under acute and chronic exposures to simulated high altitude, with special reference to pulmonary oedema. University of Delhi.

Agriculture

1. Adsule, Pandurang Gunda. Evaluation of some thermo-plastic containers for the packing of different fruit products. I. A. R. I., Delhi.

2. Ahuja, Mohan Singh. Effect of irradiation on the physicochemical and rheological changes in relation to baking quality of Punjab wheats. Punjab Agricultural University.

3. Ajit Singh. Inter-relation of P and S in crops and evaluation of S availability using ³⁵S. Punjab Agricultural University.

4. Amar Jit Singh. Efficient utilization of available quantity of irrigation water in dwarf wheat under varying rates of nitrogen. I. A. R. I., Delhi.

5. Bandyopadhyaya, Amitabha. Are multiple cross multiple pollen hybrids an answer for productive population in *Brassica Campestris* Var. (Brown sarson) ? I. A. R. I., Delhi.

6. Bandyopadhyay, Bimal Kumar. Influence of soil cationic environment of crop responses to NPK fertilizers. I. A. R. I., Delhi.

7. Basant Lal. On some contribution on designs for qualitative-cum-quantitative experiments. I. A. R. I., Delhi.

8. Basuchaudhuri, Pranab Kumar. Effect of molybdenum on nitrogen utilization in rice. University of Calcutta.

9. Bedi, Sachchidananda. Studies on the dissipation and metabolism of two dichloromethyl diaryl phosphenates as new antiblast compounds in rice plants. I. A. R. I., Delhi.

10. Bhatnagar, Deepak. Some investigation on the effect of magnetic field on wheat (Sonalika) and *Drosophila Melanogaster*. I. A. R. I., Delhi.

11. Bhilegaonker, Madhao Gopalrao. A study of fertilizer utilisation behaviour of farmers and communication patterns under constraints. I. A. R. I., Delhi.

12. Chauhan, Nawal Kishore. Inducing change through S. I. T. E. : A study of some socio psychological and communication correlates of adoption behaviour of rural audience of S. I. T. E. in North Bihar. I. A. R. I., Delhi.

13. Chauhan, Rajeshwar Singh. Aneuploidy in guava, *Psidium Guajav* L. I. A. R. I., Delhi.

14. Chennakrishna Reddy, K. Studies on the influence of soil treatments on the availability and plant uptake of zinc. I. A. R. I., Delhi.

15. Daya Ram. Physical properties of simulated soil systems as influenced by clay minerals with special reference to water retention characteristics. I. A. R. I., Delhi.

16. Deol, Gurdev Singh. Studies on the epidemiology of cucumber mosaic virus in chilli, *Capsicum annum* Linn. Punjab Agricultural University.

17. Dhonukshe, Bacharam Laxman. Studies on combining ability of yield and yield components in Durum wheats. I. A. R. I., Delhi.

18. Gangasaran. Suitability of germplasm of brown sarson (*Brassica campestris*) for different dates of seeding and varying rates and methods of nitrogen application. I. A. R. I., Delhi.

19. Ghodake, Raghunath Dnyanu. Economics of pest control in rice. I. A. R. I., Delhi.

20. Goswami, Apurba Milan. Effect of some chemical treatments on the fruit quality in grapefruit, *C. paradist* Macf. I. A. R. I., Delhi.

21. Goswami, Parama Nanda. Effect of dwarfing genes on yield and its components in Pearl Millet, *Pennisetum typhoides*, S & H. I. A. R. I., Delhi.

22. Hawaldar Singh. Genetic investigations on some agronomic and quality traits in Pearl Millet, *Pennisetum typhoides* Stapf and Hubb. I. A. R. I., Delhi.

23. Jagdish Kumar. Studies on multilines of Bread wheat variety Kalyansona: Their development and significance in relation to P. recondata. I. A. R. I., Delhi.

24. Jivadhan. Rooting of cuttings of fruit trees through bottom heat. I. A. R. I., Delhi.

25. Kakati, Narendra Nath. Chemical weed control in rice in relation to fertiliser use. I. A. R. I., Delhi.

26. Katiyar, Kuldip Narain. Population dynamics of bollworms vis-a-vis reproductive stages of cotton. I. A. R. I., Delhi.

27. Krishan Ram. Biochemical and population genetic studies of the mechanism of protogyny in *Pennisetum typhoides*. Punjab Agricultural University.

28. Mahto, Yogendra. Ecological studies of acridids of Delhi Region including bionomics of *Eyprepocnemis alacris impicta* Uvarov. I.A.R.I., Delhi.

29. Maskina, Mohinder Singh. Studies on the chemical equilibria of zinc in submerged soils. Punjab Agricultural University.

30. Meena, Nathu Lal. Studies on grain yield, nutrient uptake in plant parts and root distribution of some wheat varieties as influenced by rates of nitrogen and phosphorus. I.A.R.I., Delhi.

31. Menon, T. C. Manmohan. On some statistical designs for varietal selection. I.A.R.I., Delhi.

32. Mittal, Vijay Kumar. Analysis of harvesting and threshing systems of wheat. I.A.R.I., Delhi.

33. Mool Chand. Mutation studies in *Solanum khasianum* Clarke. I.A.R.I., Delhi.

34. Morey, Devidas Krishnarao. Effects of multiple crop sequences and stover management on crop yields and soil properties. I.A.R.I., Delhi.

35. Mruthyunjaya. An economic analysis of risk on drought prone farms in Bijapur District, Karnataka. I.A.R.I., Delhi.

36. Murari Lal. Genetical studies on the compactness of curd in Indian cauliflower, *Brassica oleracea* L. var. *Botrytis* L. I.A.R.I., Delhi.

37. Murari Singh. Design and analysis of balanced and partially balanced experiments. I.A.R.I., Delhi.

38. Naqvi, Saiyed Mohammad Ansar. Identification of genes for leaf rust resistance in certain varieties of *Triticum Aestivum* L. I.A.R.I., Delhi.
 39. Negi Anand Sain. Soil fertility evaluation of the District Kinnaur of Himachal Pradesh. I.A.R.I., Delhi.
 40. Panda, Mukhtikam. Studies on reniform nematode, *Rotylenchulus reniformis* infesting cowpea, mung and urid. I.A.R.I., Delhi.
 41. Pande, Suresh. Studies on the epidemiology of stem rust of wheat with special reference to sporulation of the pathogen, *Puccinia graminis Tritici* Pers. Erikss and Henn. I.A.R.I., Delhi.
 42. Parasram, Samsundar. The behaviour of stored grain insects conditioned on wheat varieties. I.A.R.I., Delhi.
 43. Patel, Arjun Lal. Effect of light and temperature on growth of the rice plant. I.A.R.I., Delhi.
 44. Puri, Raj Pal. Genetic analysis of cooking quality with reference to amylose and gelatinization temperature in rice. I.A.R.I., Delhi.
 45. Raghu Vardhan Reddy, S. Studies on the effect of soil moisture regimes at different growth stages of growth, yield and quality of mustard, *Brassica Cammpestris* L. Var, (Brown sarson) and safflower, *Carthamus tinctorius* L. I.A.R.I., Delhi.
 46. Raghvendra Pratap Singh. Studies on the antifeedant properties of the chemical present in plants of family *amaryllidaceae* with special reference to desert locust, *Sghistocerca gregaria* F. I.A.R.I., Delhi.
 47. Rai, Samarjit. Studies on the incidence and damage due to sorghum shootfly to determine the economic injury level. I.A.R.I. Delhi.
 48. Rajinder Singh. Cytogenetic studies of chromosomal interchanges and tertiary trisomics in *Pennisetum typhoides* (Burm.) S. & H. Punjab Agricultural University.
 49. Rao, V. S. R. Effect of gamma-irradiation on the rheological and baking qualities of wheat. University of Bombay.
 50. Ramakrishna, Garapati Venkatasurya. Some contribution to the design and analysis of fractional factorials. I.A.R.I., Delhi.
 51. Ramsajiwan Singh. Nutrient and water management under different kharif intercropping systems, I.A.R.I. Delhi.
 52. Razi, Ahmad. Studies on the pests of brinjal and their control with special references to fruit borer, *Leucinodes orbonalis* Guenee (Pyralidae : Lepidoptera). I.A.R.I., Delhi.
 53. Sairam, Raj Kumar. Studies on photosynthesis and related metabolism in sunflower. I.A.R.I., Delhi.
 54. Sathyanarayanaiah, Kuruvadi. Genetic studies on Rainfed Wheat. I.A.R.I., Delhi.
 55. Sat Paul. Biology and control of *Phalaris minor* Retz. in Wheat, *Triticum aestivum* L. Punjab Agricultural University.
 56. Sen, Arabinda. Diffusion of Zn, Mn and Fe to plant root as affected by physical and chemical environment of soil. I. A. R. I., Delhi.
 57. Shahiduzzaman Muhammad Elias. Optimal cropping patterns in Dacca-Narayanganj-Demra Irrigation Project (Bangladesh) : An integration of irrigation management and drainage development. I. A. R. I., Delhi.
 58. Shekar, Vasudeo Bhimraoji. Line x tester analysis for combining ability in forage Sorghum, *Sorghum bicolor* (L.) Moench. I.A.R.I., Delhi.
 59. Shripal Singh. Biochemico genetic analysis of adaptation in pearl millet, *Pennisetum typhoides*, Stapf & Hubb. Meerut University
 60. Sinha, Dinesh Chandra. Studies on the leaf rust of maize caused by *Puccinia Sorghi* (Schw) in India. University of Bihar.
 61. Srinivasa Rao, N. K. Studies on the contribution of stem sugars and various photosynthetic plant parts to grain development in *Sorghum vulgare* pers. I. A. R. I., Delhi.
 62. Sarivastava, Ashok Kumar. Co 2 compensation concentration as influenced by environmental conditions, growth and development in some crop plants. I. A. R. I., Delhi.
 63. Srivastava, Ram Prakash. Feasibility of integrated control of fruit pests. I. A. R. I., Delhi.
 64. Srivastava, Yogesh Chandra. Genetical studies in *Lathyrus satvus* (L.) I. A. R. I. Delhi.
 65. Surendra Pal Singh. Studies on diversity, adaptation and gene action in some populations of Bengal Gram, *Cicer arietinum* (L.). I.A.R.I., Delhi.
 66. Suryanarayana Pillai, S. On efficiency of cluster sampling techniques. I.A.R.I., Delhi.
 67. Tomar, Sarman Singh. Transformations of dillapiole, a constituent of *Anethum Sowa* Roxb. into compounds of possible pesticidal importance. I.A.R.I., Delhi.
 68. Vasudeva Rao, M. J. Genetic Analysis of fodder yield and quality in sorghum, *Sorghum Bicolor* (L.) Moench. I.A.R.I., Delhi.
 69. Verma, Ashok Kumar. Effect of atmospheric gases on pest infestation during storage and on keeping quality of walnuts. I.A.R.I. Delhi.
- ### Veterinary Science
1. Bose, A. Saras chandra. Studies on inhalation anaesthesia in buffaloes with special reference to thoracic surgery. Punjab Agricultural University.
 2. Divakaran, S. Studies on white spots defect in sheep skins. University of Madras.
 3. Natrajan, N. Response to index selection for short term egg mass in Meyer strain white leghorn chickens. Tamil Nadu Agricultural University.
 4. Remesh Chandra. Biochemical and toxicological studies of malathion in buffalo calves. Punjab Agricultural University.
 5. Sethuraman V. Studies on bovine ruminal indigestion in natural and experimental cases and their therapy. Punjab Agricultural University.
- ### Home Science
1. Patwardhan, Asha Anil. Comparative study of three different types of mixers and grinders with regard to time, motion, energy and cost. Nagpur University.

**RAVISHANKAR UNIVERSITY
RAIPUR**

NOTIFICATION No 2/77

Applications are invited on the prescribed form (seven copies) obtainable from the Registrar on payment of Rs. 5/- in cash or by crossed Bank Draft alongwith a self addressed envelope (23×11cm) stamped for Rs. 1.20 for the post of Reader in Geography in the University Teaching Department.

1. Reader; One in Geography
Specialisation : Geography of Resources/Regional planning, Land Utilisation.

a. Scale of pay : 1100-50-1600.

b. Qualification

- 1—A Doctor degree or published work of an equivalent high standard; and
- 2—A second class Master's degree in a relevant subject with at least 50% marks

(i) (Grade B in the seven point scale) or an equivalent degree of a foreign University and (While taking into account the marks/Grade, the marks/grade obtained in internal assessment, if any, shall be excluded)

(ii) At least 50% marks at the Bachelor degree exam on the basis of which the division is awarded at the degree level by the university; and

(iii) At least 50% marks at the Higher Secondary/Intermediate / Pre-University Exam. as the case may be;

Provided that if the Selection Committee is of the view that the research work of a candidate as evident from his thesis or from his published research work is of a very high standard, it may relax any of the qualifications prescribed in 2 above;

3—(i) Five years experience of teaching postgraduate classes; and

(ii) At least three year's experience of guiding research.

1. The requirement regarding minimum percentage of marks shall be relaxed upto 5% in case of scheduled castes / scheduled tribes

candidates. Fifteen per cent of the posts in each department are reserved for the candidates belonging to scheduled castes and 18% for the scheduled tribes candidates.

2. General :

(i) Contributory provident fund, dearness and other allowances and benefits are available as per University Rules. Higher initial salary in the scale may be considered in case of exceptionally qualified and deserving candidates.

(ii) Candidates in employment

must submit their applications through proper channel. Applicants called for interview will have to bear their own expenses.

(iii) The university reserves the right not to fill the post without assigning any reason thereof.

3. Applications along with copies of testimonials and attested copies of certificates should reach the Registrar on or before April 30, 1977.

**H. N. SHUKLA
REGISTRAR**

**INDIAN SCHOOL OF MINES
DHANBAD-826004**

Advt. No. 420008/77

Dated March 30, 1977

ANNOUNCEMENT OF FACULTY POSITIONS

1. The following vacancies exist at the Indian School of Mines—a 'deemed University' under the University Grants Commission Act, 1956 :

1. **Five Professors :** One in *Geophysics* for the Deptt. of Applied Geophysics, one in *Physics* and one in *Electronics* for the Deptt. of Physics and Mathematics, one in *Fuel Engg.* for the Deptt. of Chemistry, Fuel and Metallurgy, and one in *Mine Surveying* for the Deptt. of Engg. and Mining Machinery.
2. **Four Assistant Professors :** One in *Mathematics* for the Deptt. of Physics and Mathematics, one each in *Metal Mining* and *Coal Mining* in the Deptt. of Mining Engg. and one in *Petroleum Engg.* for the Deptt. of Petroleum Engg.
3. **Two Visiting Asstt. Professors** for the Deptt. of Mining Engg. in the specialisation of Coal Mining Methods/Metal Mining Methods/Opencast Methods.
4. **Nine Lecturers :** Two for the Deptt. of *Mining Engg.*, one for the Deptt. of *Petroleum Engg.*, two for the Deptt. of *Engg. and Mining Machinery*, one in *Coal Preparation* for the Deptt. of *Chemistry, Fuels and Metallurgy*, one in *Computer Systems* and one in *Industrial Relations* for the Deptt. of Industrial Engg. and Management, and one in Economics for the Deptt. of Humanities and Social Sciences.

The post of visiting Asstt. Professors are tenure posts normally for one-year duration only and are thus very suitable for persons employed in industry and research institutions who would like limited academic development.

Except the posts of Asstt. Professor in Petroleum Engg. (which is currently a leave vacancy but is likely to continue and become permanent), and those of lecturers in Petroleum Engg. computer systems and in Economics (which are currently temporary vacancies), all posts are either permanent or likely to become permanent in due course.

PAY SCALES AND UPPER AGE LIMITS

Professor : Rs. 1500-60-1800-100-2000-125/2-2500 (50 years)

Asstt. Professor/Visiting Asstt Professors : Rs 1200-50-1300-60-1900 (40 years)

Lecturers : Rs. 700-40-1100-50-1600 (35 years)

Allowances admissible as per Government of India Rules sanctioned from time to time. Total emoluments currently amount to Rs. 969/- at the Rs. 700 stage, Rs. 1503/- at the Rs. 1200 stage, Rs. 1803/- at the Rs. 1500/- stage and Rs. 2203/- at the Rs. 1900 stage. Upper age limit relaxable in respect of certain categories and persons otherwise considered specially suitable.

II. Specialising in the field of earth sciences and technology, Indian School of Mines conducts two B. Tech. Programmes (in Mining Engg. and Petroleum Engg.), two M. Sc. programmes (in Applied Geology and Applied Geophysics) as well as several post-graduate industry-oriented programmes, including three M. Tech programmes (in Mining and Mine Planning/Opencast Mining/Mining Machinery). One DISM/M.Tech. Programme (in Mineral/Coal Preparation), a post-graduate diploma programmes—one in Mineral Exploration and the other in Mining Geophysics. An additional M. Tech Programme (in Pet. Prodn) and two more M.Sc. (Tech) Programmes (one in Engg. Geology, and the other in Petroleum Exploration) are expected to be started next year.

The School also has an ambitious continuing education executive development programme (covering about 44 courses per year), a strong R & D activity, and approved scheme of Institutional consultancy.

III. Information for candidates and prescribed application forms are obtainable from the Registrar, Indian School of Mines, Dhanbad-826004, on sending a self addressed envelope of the size 29 x 12 cm. affixed with postal stamps of the value of Rs. 2.70 paise. Application in the prescribed application form, complete in all respects, should reach the undersigned on or before April 30, 1977. Those in service are advised to apply through their employer (s).

CANVASSING IN ANY FORM WOULD BE A DISQUALIFICATION

M. S. RAMAMURTHY
REGISTRAR

MEERUT UNIVERSITY MEERUT

Applications are invited for the following posts which have been sanctioned under the V Five Year Plan :—

- (A) Professor in the grade of Rs. 1500-60-1800-100-2000-125/-2-2500/-. One each in Physics, Zoology, English, History, Political Science and Economics

Qualifications : 1. (a) A Doctorate Degree in the subject of study concerned or a published work of high standard in that subject; (b) Consistently good academic record (that is to say, overall record of all assessments throughout the academic career) with average second class career together with at least Second class in Bachelor's degree and first class or high second class (that is to say, with an aggregate

of more than 54% marks) in Master's Degree in the subject or equivalent degree of a Foreign University in the subject. The qualifications can be relaxed as provided in the statutes.

- (2) At least 5 years' research/teaching Experience in a University or a recognised institution and should have distinguished himself as a researcher and should have competence to give post M A./M.Sc. Courses and guide research

Area of Socialization :—For Professor of Physics is Nuclear Physics/Solid State (Experimental)

- (B) Reader in the grade of Rs. 1200-50-1300-60-1900/-. One each in Physics, Botany, Sociology, Psychology, Russian and Two in Mathematics.

Qualifications :—(1) (a) A Doctorate Degree in the subject of study concerned or a published work of high standard in

that subject; (b) Consistently good academic record (that is to say, overall record of all assessments throughout the academic career) with average second class career together with at least II class in Bachelor's Degree and First class or high second class (that is to say with an aggregate of more than 54% marks) in Master's Degree in the subject or equivalent degree of a Foreign University in the subject. The qualifications can be relaxed as provided in the statutes.

- (2) At least 5 years' research/teaching experience in a university or a recognised Institution and should have distinguished himself as a researcher and should have competence to give post MA/M.Sc. courses and guide research

Area of Specialisation :—(a) For Reader in Physics: Electronics/Atomic and Molecular Physics/Atomic Collisions (Experimental), (b) For one Reader in Mathematics : Pure Mathematics (General Topology) and for the other Reader in Mathematics—Statistics (Experimental Design/Agriculture Statistics/Bio-Statistics).

- (c) For Reader in Botany-Micology and Plant Pathology/Morphogenesis/ Ecology/Environmental Biology/Microbiology.

- (D) For Reader in Sociology-Social Stratification/Rural Sociology/Political Sociology.

- (e) For Reader in Psychology :— Industrial/ Social/Comparative/ Experimental Psychology.

- (C) Lecturer in the grade of Rs. 700-40-1100-50-1600/- One each in Physics, Botany, Zoology, Sociology, Psychology, English, History, Education, Political Science and Economics.

Qualifications :—(1) (a) A Doctorate Degree in the subject of study concerned or a published work of high standard in that subject (b) Consistently good academic record (that is to say overall record of all assessments throughout the academic career with average Second Class career together with at least Second Class in Bachelor's Degree and First class or high Second class (that is to say with an aggregate of more than 54% marks) in Master's Degree in the subject or equivalent degree of a Foreign University in the subject.

- (2) If a candidate possessing qualifications specified above is not available or is not considered suitable, a person possessing a consistently good academic record (Due weightage being given to M. Phil or equivalent Degree or research work of quality) may be appointed on the condition that he will attain the said qualifications (namely Doctorate or published work as aforesaid) within five years of the date of his appointment.

Provided that where the teacher so appointed, fails to attain the prescribed qualification within the said period of 5 years, he shall not be entitled to

annual increments until he attains such qualifications.

Area of Specialisation :—(a) For Lecturer in Physics: Atomic and Molecular Physics/Atomic Collisions.

(b) For Lecturer in Botany :—Mico-logy & Plant Pathology/Morphogenesis/Ecology/Environmental Biology/Microbiology.

(c) For Lecturer in Psychology :—Industrial/Social Comparative /Experimental Psychology.

Benefit of Provident Fund available as admissible under the rules on confirmation. Period of probation for all Posts is one year. It is not necessary to fill all the advertised posts.

For the post of Lecturer, other things being equal, preference will be given to Scheduled Caste/Tribe candidates who are considered fit. Such candidates should indicate in their application that they belong to Scheduled Caste/Tribe and attach certificate to this effect from the District Magistrate of the District to which they belong. No other certificate for this purpose will be entertained.

Applications on the prescribed form available on request (accompanied with a self-addressed envelope of size 23cm × 10cm and stamped for Rs. 0. 40) free of cost from the office of the Registrar, with relevant testimonials, publications, etc. accompanied by a bank draft of Rs. 7.50 payable to Registrar, Meerut University, Meerut, should reach the Registrar, Meerut University, Meerut by Monday, 2nd May, 1977. The candidates who are in service must send their application through proper channel. Applications form to outstation candidates will be issued by post up to Saturday, 23rd April, 1977.

**B. M. SINGH
REGISTRAR**

**BIDHAN CHANDRA KRISHI VISWA
VIDYALAYA P. O. MOHANPUR,
WEST BENGAL**

Advertisement No. APPTT./2/77

Applications in prescribed forms are invited for the following posts on the scales mentioned below with benefits of C P. Fund, D. A. and other allowances as admissible under the University Rules :—

A. PROFESSOR OF VETERINARY ANATOMY

Qualifications :

Essential :

- (i) Consistently good academic record with first or high second class (B+) Master's degree or recognised equivalent qualification in Veterinary Anatomy following a good Bachelor's degree in Veterinary and Animal Science;

(ii) A doctoral degree in Veterinary Anatomy;

(iii) At least ten year's experience of teaching preferably at Post-graduate level;

(iv) Capacity to conduct and guide research as evident from published papers;

(v) Demonstrated ability of leadership in the field of Research and significant contribution to the progress of Veterinary & Animal Sciences.

Desirable :

Familiarity with the conditions of Veterinary and Animal Sciences in West Bengal.

B. PROFESSOR OF ANIMAL NUTRITION

Qualifications :

Essential :

- (i) Consistently good academic record with first or high second class (B+) Master's degree or recognised equivalent qualification in Agriculture/Animal Science/Dairy Science/Veterinary Science with specialisation in Animal Nutrition/Animal Genetics & Breeding following a good degree in Agriculture/Animal Science/Dairy Science/Veterinary Science or a good Honours degree in a Science or a good Honours degree in a Science basic for Animal Nutrition/Animal Genetics & Breeding;

(ii) A doctoral degree in relevant subject;

(iii) At least ten years' experience of teaching preferably at Post-graduate level;

(iv) Capacity to conduct and guide research as evident from published papers;

(v) Demonstrated ability of leadership in the field of Research and significant contribution to the progress of Veterinary & Animal Sciences.

Desirable : Familiarity with the conditions of Veterinary and Animal Sciences in West Bengal.

C. PROFESSOR OF ANIMAL PHYSIOLOGY

Qualifications :

Essential :

- (i) Consistently good academic record with first or high second class (B+) Masters' degree or recognised equivalent qualifications in Animal Physiology following a bachelor's degree in Veterinary and Animal Science.
- (ii) A doctoral degree in relevant subject ;

(iii) At least ten years experience of teaching preferably at Post-graduate level

(iv) Capacity to conduct and guide

research as evident from published papers:

(v) Demonstrated ability of leadership in the field of Research and significant contribution to the progress of Veterinary & Animal Sciences.

Desirable : Familiarity with the conditions of Veterinary and Animal Sciences in West Bengal.

D. LECTURER IN VETERINARY ANATOMY

Qualifications :

Essential : (i) Consistently good academic record with first or high Class (B+) Master's degree or recognised equivalent qualification in Veterinary Anatomy following a good Bachelor's degree in Veterinary and Animal Science.

(ii) A doctoral degree in Veterinary Anatomy or published work of an equally high standard

(iii) At least two year's experience of teaching/Research in Veterinary Anatomy.

E. LECTURER IN ANIMAL PHYSIOLOGY

Qualifications :

Essential : (i) Consistently good academic record with first or high second Class (B+) Master's degree or recognised equivalent qualification in Animal Physiology following a good Bachelor's degree in Veterinary and Animal Science

(ii) A doctoral degree in relevant subject or published work of an equally high standard

(iii) At least two years' experience of Teaching/Research in Animal Physiology.

F. LECTURER IN BOTANY

Qualifications :

Essential : (i) Consistently good academic record with Ist or 2nd Class (B+) Master's Degree in Botany with specialisation in Plant Physiology and/or Taxonomy;

(ii) A doctoral degree in the relevant subject or published work of an equally high standard;

(iii) At least 2 years experience in Teaching/Research.

G. LECTURER IN CHEMISTRY :

Qualifications :

Essential : (i) Consistently good academic record with Ist or high 2nd class (B+) Master's degree in Biochemistry following a good honours degree in Chemistry;

(ii) A doctoral degree in Bio-Chemistry or published work of an equally high standard;

(iii) At least two years' experience Teaching/Research in Bio-Chemistry.

H. FIELD OFFICER (Temporary under a Scheme)

Qualifications :

Essential : (i) Master's degree in Agricultural Statistics/Statistics or recognised equivalent qualification

OR

Master's degree in Agriculture/Animal Husbandry/Dairying with at least one year training in Statistics from recognised Institute.

Desirable : (i) Administrative experience or Experience of extension work in rural areas or experience in Statistical Sample Surveys.

I. FARM MANAGER (For preparing a panel of Selected Candidates)

Qualifications :

Essential : (i) A good honours degree in Agriculture, (ii) At least three years experience of the Management of a sizeable Agricultural Farm.

Desirable : A M.Sc. (Ag.) degree or recognised equivalent qualification in Agronomy.

Scales of Pay : For posts at A, B & C : Rs. 1500-60-1800-100-2000-125/2-2500/-

For posts at D, E, F & G :

Rs. 700-40-1100-50-1600/-

For posts at H : Rs. 400-40-800-50-950/- (Unrevised)

For posts at I : Rs. 300-25-650/-

Age : For A, B & C preferably below 50 years.

For D to H preferably below 40 years.

For I between 25 and 35 years.

Experience and age limit may be relaxed on the recommendation of the Selection Committee in the case of a candidate otherwise well qualified. A high initial pay in the scale may be granted on the basis of qualifications, experience and present emoluments.

Selection will not necessarily be confined to those who will apply formally.

Applications must be submitted in the prescribed form which may be

obtained from the OFFICE OF THE REGISTRAR, BIDHAN CHANDRA KRISHI VISWA VIDYALAYA, P. O. MOHANPUR, DIST. NADIA, WEST BENGAL personally or by sending self addressed stamped (0.25) paise envelope (25 cm x 12 cm) ON PAYMENT OF RUPEES EIGHT (Rs. 8.00) only for the posts BY CROSSED INDIAN POSTAL ORDER in favour of the BIDHAN CHANDRA KRISHI VISWA VIDYALAYA. Persons already in employment should apply through proper channel. Candidates

in abroad may also apply on plain paper with necessary Postal Order. Applications, completed in all respect should be submitted in an envelope superscribed with the name of the post and must reach OFFICE OF THE REGISTRAR BY THE 30th April, 1977.

Candidates called for interview will have to appear for the same at their own cost.

REGISTRAR

UNIVERSITY OF DELHI

Advt. No. Estab. IV/40/77

Applications on the prescribed form are invited for the following posts :

S. No.	Department	Designation	Areas of Specialization
1. Botany	—	i. Two Professors—	Plant Physiology, Morphogenesis, Anatomy, Morphology, and Embryology.
		ii. Six Readers	(3 for Centre of Adv. Studies)
		iii. One Lecturer (Temp. upto 31. 10. 1978)	
2. Zoology	—	i. One Reader—Ecology	(including Physiological & Behavioural Ecology).
		ii. Two Animal Attendants	(One reserved for Scheduled Caste)
3. History	—	Three Readers	
4. Modern European Languages	—	i. One Reader in Russian	
		ii. One Lecturer in Italian	
		iii. One Part-time Lecturer in Russian	
5. Modern Indian Languages	—	i. One Lecturer in Kannada	
		ii. One Lecturer in Marathi	
6. Faculty of Law :			
(a) Campus Law Centre	—	Three Lecturers (One Temporary,	
(b) Evening Law Centre—I	—	Two Lecturers (Temporary)	
7. Sociology	—	One Lecturer (Temporary but likely to continue)	
8. Geology	—	Two Lecturers	
9. Economics	—	Two Research Associates	(One for Area Study Programme and other for Centre of Advanced Studies)
10. Anthropology	—	One Lab. Attendant (Temp. but likely to continue)	(Reserved for Scheduled Caste)
11. Chemistry	—	i. One Carpenter (Temp. for the period Ending 28. 2. 1978 but likely to continue).	
		ii. One Lab. Attendant (Temp. but likely to continue)	(Reserved for Scheduled Caste)
12. Psychology	—	One Technician	
13. D. U. Library System (Reprographic Unit)	—	Four Machine Operators	
14. Central Office	—	Steno-typists	

The Scales of Pay of the posts are :

1. Professor	Rs. 1500-60-1800-100-2000-125/2-2500.
2. Reader	Rs. 1200-50-1300-60-1900.
3. Lecturer	Rs. 700-40-1100-50-1600.
4. Research Associate :	Rs. 700-40-900-EB-40-1100-50-1300.

5. Part-time

Lecturer	Rs. : 500/- P.M. (fixed) for work-load ranging from 3-6 hours per week.
	Rs. 750/- P.M. (fixed) for work-load ranging from 7-10 hours per week.

6. Technician : Rs. 550-25-750-EB-30-900
7. Carpenter : Rs. 330-8-370-10-400-EB-10-480
8. Steno-typist : Rs. 330-10-380-EB-12-500-EB-15-560
9. Machine Operator : Rs. 260-6-290-EB-6-326-8-366-EB-8-390-10-400
10. Lab. Attendant : Rs. 210-4-250-EB-5-270
11. Animal Attendant : Rs. 196-3-220-EB-3-232

All post carry D. A., C.C.A. and H. R. A. as admissible under the rules in force in the University from time to time.

I. ESSENTIAL QUALIFICATIONS FOR :

1. Professorships :

A Scholar of eminence.

Independent published work of high standard and experience of teaching Post-graduate classes and guiding research for a considerable period desirable.

2. Readerships :

Good academic record with first or high second class Master's Degree in the subject concerned with a Doctor's Degree or equivalent published work.

Independent published work (in addition to the published work mentioned above) with at least 5 years' teaching experience in Honours/Post-graduate classes essential.

3. Lectureships / Part-time Lectureship (Excepting for posts in the Faculty of Law) :

Consistently good academic record with a first or high second class (B+) Master's Degree or an equivalent degree of a foreign University in the subject concerned.

Desirable (in order of preference)

(i) A Doctor's Degree/or Evidence of research work of equivalent standard in the subject concerned.

(ii) Teaching experience of Degree/Post-graduate Classes. Provided that if a teacher is not a Ph. D. at the time of his/her appointment and does not qualify himself/herself for the award of Ph. D. Degree from a recognised University in the subject which is being taught by him/her within the period of five years from the date of his/her appointment or does not give evidence of research work of equal standard within that period in the subject concerned, he/she shall not be entitled to any future increments after the expiry of the said period of five years till such time he/she fulfils the above mentioned requirements.

4. Lectureships in the Faculty of Law:

Consistently good academic record with a first or high Second class (B+) Master's degree in Law or an equivalent Degree of a foreign University in the subject concerned.

Explanation : Consistently good academic record would mean overall record of all assessments throughout the academic career leading to the Master's Degree, which should at least be B+ or high second class.

5. Research Associates :

Good academic record with first or high second class (B+) Master's Degree or an equivalent degree of a foreign University in Economics.

Note : Initial appointment will be for a tenure period of three years extendable by another two years only. **In no case the tenure will extend beyond 5 years in all.**

6. Technician :

Must be Science Graduate of a recognised University.

7. Steno-typists

(Certain percentage of the total number of vacancies is reserved for Scheduled Caste, Scheduled Tribes and Ex-service-men)

Matriculation with proficiency in Typewriting at a speed of not less than 35 w.p.m. and proficiency in Shorthand at a speed of not less than 80 w.p.m.

Note: Candidates for the posts of Steno-typists will be required to appear and qualify in the tests in General English, Shorthand and Type-writing, to be held by the University.

8. Carpenter

(i) Trade Certificate or Diploma from a recognised Institution, with some experience; (ii) Should have fair knowledge of various kinds of timbers and should be able to help in selecting timber to suit different jobs; (iii) Should be able to prepare articles of furniture and other laboratory apparatus to accurate dimensions (specifications) of very fine finish.

9. (i) Machine Operator (Offset)

(a) Proficiency in running of Offset Machines-Rotaprint/Romayor/

Maltolith; (b) Able to do day-to-day maintenance of the Offset Machines;

(c) Three years experience in the trade; (d) Education: Middle Standard.

(ii) Machine Operator (Process Camera);

(a) Proficiency in handling of Automatic/Semi-Automatic Process Camera including multicolour halftone work; (b) Ability to do day-to-day maintenance of the Process equipment; (c) Three years experience in the trade; (d) Knowledge

INDIAN SCHOOL OF MINES DHANBAD-826004.

Advt. No. 420007/77

Dated April 2, 1977.

Applications are invited for the post of Horticulturist.

Qualifications:

(A) B.Sc. (Agriculture) with 60% marks. (Essential)

(B) Five years experience in horticulture especially in lay out, development and maintenance of parks, flowerbeds, nurseries, etc. (Essential)

Pay Scales: Rs. 425-15-500-EB-15-560-20-700/-

Besides pay, I S M employees get allowances as admissible to Government of India employees.

AGE: Normally not more than 35 years, relaxable for certain categories of candidates.

Further details and general information to candidates and prescribed application forms are obtainable from the Registrar, Indian School of Mines, Dhanbad-826004 on sending a self addressed envelope of size 29 cm x 12 cm, affixed with postage stamp of the value of Rs. 2.65 only. Completed application forms should reach the Registrar on or before **April 30, 1977.**

Canvassing in any form will be treated as a disqualification.

M. S. RAMAMURTHY
REGISTRAR

of composition of various chemicals used in the process; (e) Education: Middle Standard.

(iii) Machine Operator (Plate Making)

(a) Ability to make surface and deepth plates for Offset Machines both halftone and line including multi-colours work; (b) Should be able to do day-to-day maintenance of the Plate Making equipment; (c) Three years experience in the trade; (d) Education: Middle Standard

(iv) Machine Operator (Micro-filming):

(a) Ability of handling microfilm and/or Microfiche Camera; (b) Day-to-day maintenance of Camera; (c) Education: Middle Standard; (d) Experience: 3 years in the Microfilm and Microfiche work.

10 Lab Attendants:

Should have passed the Matriculation or an equivalent examination with Science subjects.

11 Animal Attendants:

Should have passed 8th class examination from the Government recognised school with an experience of working in animal house

II. SPECIAL/DESIRABLE QUALIFICATIONS FOR:

1. Readerships in Botany: Experience of research in inter-disciplinary areas.

2. Lectureship in Botany (Temp): Specialization in Developmental Botany.

3. Readerships in History:

1st Post: Modern Indian History
2nd Post: Modern Indian History with proficiency in Economic History

3rd Post: Medieval Indian History, proficiency in handling the Persian Sources.

4. Readership in Russian:

(i) Advanced training in translation technique; (ii) Experience in practical translation; (iii) Training in Language Laboratory and material production.

5. Lectureship in Italian:

Ability to speak correct Italian. Experience of teaching Italian for 2 years desirable.

6. Part-time Lectureship in Russian: Ability to speak correct Russian.

7. Lectureships in Kannada and Marathi:

(i) Fluency in English and/or Hindi; (ii) Training and experience in Comparative Literature.

8. Lectureships for Evening Law Centre I:

Specialization and teaching experience in one or more of the following subjects:

Tax Law, Labour Law, Indian Legal and Constitutional History, Law of Property or Public Control of Business.

9. Lectureship in Sociology:

Specialization in research methods and statistical and survey techniques.

10. Lectureships in Geology:

Teaching and/or professional experience in recognised organisations in any one or more of the following sub-disciplines of Applied Geology: Hydrogeology; Geophysical Prospecting; Mineral Economics; Mining Geology; Mineral Fuels; Photo-Geology; Engineering Geology Mineral Dressing.

11. Technician:

Diploma in Electrical Electronics with two years' experience.

12. Lab. Attendant in Anthropology:

Should have worked in a Laboratory.

13. Lab. Attendant in Chemistry:

(i) Should have worked in a Laboratory; (ii) Should have a recognised Diploma/Certificate of Electrician of any Government organisation.

The prescribed application form can be had from the **Information Office** of the University either personally or by sending a self-addressed envelope (5"x11") with postage stamps worth Rs. 2.55.

Selected candidates will have to produce the original documents relating to their age, qualifications, experience, etc. at the time of interview

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates; mark-sheets published research articles, etc should reach the undersigned not later than **5th May 1977**.

Note: 1 It will be open to the University to consider the names of suitable candidates who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all posts on the recommendations of the Selection Committee.

2. Canvassing in any form on behalf of the candidates will disqualify.

3 Candidates from outside Delhi for Teaching posts, called for interview, will be paid contribution towards travel expenses equivalent to $1\frac{1}{2}$ single Second Class Rail fare.

4 Those who had applied in response to the earlier advertisements for the posts of **Readers in Botany and Zoology**, need not apply again, but in case they have any additional information to supply, they may do so.

Registrar

University of Delhi

CENTRAL INSTITUTE OF
EDUCATION 33-CHHATRA MARG
DELHI-7

April 9, 1977

Applications are invited for the post of Lecturer in Education (Extension) in the pay scale of Rs 700-1600 in the Central Institute of Education on the prescribed form along with copies of certificates supporting the facts mentioned in the application.

The selected candidates will be admissible for usual allowances like D A, C C.A., H.R.A. as are admissible under the Delhi University rules in force from time to time.

The prescribed application form can be had from the office of the Central Institute of Education, either personally or by sending a self addressed envelope with postage stamps worth Rs. 2.40.

Selected candidates will have to produce the original documents relating to their age, qualifications, experience etc. before joining the appointment.

Application accompanied by attested copies of the Degrees and other certificates and published research articles etc. should reach the undersigned not later than **April 28, 1977**.

Relaxation of any of the qualifications may be made in exceptional cases on the recommendations of the Selection Committee.

Qualifications

1. Consistently good academic record with a First or High second class (B+) Master's Degree in Education or an equivalent degree of a foreign university in the subject.

2. Teaching experience either in higher secondary school or in training college for not less than three years.

3. Experience in organising in-service programmes/educational activities.

Desirable

A Doctor's Degree or evidence of research work of equivalent standard in the subject concerned.

Candidates called for interview from outside Delhi will be paid contribution towards Travelling Expenses equivalent to $1\frac{1}{2}$ Second Class Rail Fare as per rules.

PRINCIPAL

**INDIAN INSTITUTE OF TECHNOLOGY,
BOMBAY**

**Centre of Advanced Studies in Resources Engg.
P. O. I. I. T., Powai, Bombay-400076**

Advertisement No. 874/77

Applications on plain paper are invited from the citizens of India for the following posts in the Centre of Advanced Studies in Resources Engineering on or before 30th April, 1977, by the Head, Resources Engineering, I.I.T. Bombay, Powai, Bombay-400076. The posts are temporary for the present tenable for 3 to 4 years and likely to continue. The aim of the Centre is to carry out research and development work in Remote Sensing applications and resources exploitation relevant to the discipline of Mineral exploration and beneficiation, Pedology, Soil Taxonomy, Forestry, Land use and Land Capability etc. with a view to developing technology for rapid integrated surveys for speedy and economic exploration and exploitation of replenishable and non-replenishable natural resources. The Centre is also planning to conduct a post-graduate course in Resources Engineering. The activities of the Centre are interdisciplinary and multi-institutional in character.

The Centre is utilising the existing sophisticated instruments and fulfilled laboratory facilities from various departments including the facilities available in the Computer Centre of the Institute such as EC-1030, MINSK-2 and H. P. 1100A. The Regional Sophisticated Instruments Centre and the central facilities have such modern equipments as Scanning Electron Microscope, Transmission Electron Microscope, Atomic Absorption Spectrophotometer Automatic X-ray Diffraction Unit, NMR, ESR, etc.

POSTS AND SCALES OF PAY:

- (a) Chief Project/Research Engineer/Scientist:
Rs. 2000-125/2-2500.
- (b) Sr. Research Engineer/Scientist:
Rs. 1500-60-1800-100-2000.
- (c) Project/Research Engineer/Scientist:
Rs. 1100-50-1600.
- (d) Asstt. Project/Research Engineer/Scientist:
Rs. 700-40-900-EB-40-1100-50-1300.

QUALIFICATIONS AND EXPERIENCE FOR EACH OF THE ABOVE POSTS:

- (a) A good degree in Engineering or Ph.D. in Science with relevant specialisation with at least 10 years experience in the field of specialisation.
- (b) A good degree in Engineering or Ph.D. in Science with relevant specialisation with at least 7 years experience in the field of specialisation.

- (c) A Bachelor's degree in Engineering or Master's degree with at least 5 years experience in the field of specialisation.
- (d) A Bachelor's degree in Engineering or Master's degree in Science with at least 2 years experience in the field of specialisation.

Candidates with a Diploma in Photointerpretation will be given preference. In case of experienced candidates, academic qualifications are relaxable.

Suitably qualified candidates may also be considered for the following positions :—

1. Professor : Rs. 1500-60-1800-100-2000-125/2-2500.
2. Assistant Professor: Rs. 1200-50-1300-60-1900.
3. Lecturer: Rs. 700-40-1100-50-1600.

Candidates already serving as Forest Officers, Pedologists (Soil Scientists), Geohydrologists, Geologists, Geophysicists and Ore Dressing Engineers may be considered for higher starting salary commensurate with their qualifications and experience. Since the Centre is functioning in close collaboration with various National Organisations, services of Scientists and Engineers from Universities' Research Institutions and National Organisations may also be taken on deputation basis. The terms and conditions of deputation will be as per the Government of India rules.

The research and development work is related to the actual field work for project sites anywhere in India and the selected candidates will be required to undertake field work for about six months in a year.

Candidates should furnish complete bio-data including list of research work published, last pay drawn, salary expected etc.

Youth Activities in Universities

(Continued from Page 208)

to wear a superior pose, an attitude of benevolence as if they are on a mission of deliverance. Let us not forget that the rural folk or the slum dwellers, though illiterate, may still be educated and, in some respects, more educated than even the city folk. When the city youth go to the villages they should certainly not go with a sense of superiority, rather they should go with the aim of transmitting the fruits of modern science and technology to the rural and less developed areas and in the process to learn something for themselves.

This is a challenging task, indeed, the task of social and economic reconstruction through voluntary social service by the Youth of India. The task cannot obviously be performed with the help of Governmental agencies alone. The youth of India have a vital and pivotal role to play in this great saga of human adventure. I am sure they would not only accept this challenge but also meet it adequately and nobly. ●

**INDIAN INSTITUTE OF TECHNOLOGY
BOMBAY, DELHI, KANPUR, KHARAGPUR,
MADRAS AND BHU-INSTITUTE OF
TECHNOLOGY, VARANASI**

**Advertisement No. 872
Direct Admission Notice
(Session 1977-78)**

**FOR RANK-HOLDERS, SCHEDULED CASTE
AND SCHEDULED TRIBE, NATIONAL
SCIENCE TALENT SEARCH SCHOLARS,
FOREIGN NATIONALS AND INDIAN
NATIONALS RESIDING ABROAD, HAVING
FOREIGN QUALIFICATIONS.**

A limited number of seats are available for RH/SC/ST/NSTS Scholars/INRA/Foreign Nationals for direct admission to the first year class of the following courses at the Indian Institutes of Technology and BHU-Institute of Technology, Varanasi, for the session 1977-78.

- (i) Five-year Bachelor's degree course in Aeronautical, Agricultural, Chemical, Ceramics, Civil, Electrical, Electronics and Electrical Communications, Mechanical, Metallurgical and Mining Engineering, Naval Architecture, Textile Technology and Architecture.
- (ii) Five-year integrated M.S./M.Sc. course in Chemistry, Mathematics, Physics, Applied Geology and Exploration Geophysics.
- (iii) Three-year B.Sc. (Hons.) course in Chemistry, Mathematics, Physics and Earth Sciences.

Only those candidates who satisfy the following requirements are eligible to be considered for direct admission:

RANK-HOLDERS

- (i) The candidates must have secured a rank in any of the qualifying examinations, in the current year or in the last year if their results were delayed beyond 8th July 1976, as mentioned in the instructions to candidates to be supplied with the Application Forms.
 - 1st to 10th rank: where the number of candidates appearing in the Board/University Examination in Science stream is more than 50,000.
 - 1st to 5th rank: where the number of candidates appearing in the Board/University Examination in Science stream is more than 20,000 but less than 50,000.
 - 1st to 2nd rank: where the number of candidates appearing in the Board/University Examination in Science stream is more than 10,000 but less than 20,000.
 - 1st rank: where the number of candidates appearing in the Board/University Examination in Science stream is less than 10,000.
- (ii) His/her marks in Chemistry, Mathematics and Physics taken together are not less than 70 per cent.

Scheduled Caste/Scheduled Tribe

The candidates must have secured at least 50 per cent marks in the aggregate in any of the qualifying examinations mentioned in the Instructions to candidates. Marks secured in Chemistry, Mathematics and Physics of such examination shall not also be less than 50 per cent.

Foreign Nationals/Indian Nationals Residing Abroad

- (i) Indian Nationals, who are residing at present in foreign countries for more than one year and receiving school education in foreign countries and are unable to take the Joint Entrance Examination to be held in India on 3rd and 4th May 1977 may seek direct admission.
- (ii) Foreign Nationals for whom seats are reserved by the Government of India must send their applications to the Ministry of External Affairs, Government of India, New Delhi.
- (iii) Foreign Nationals having foreign qualifications must send their completed applications to Indian Institute of Technology, Bombay 400 076. Admission of such candidates will, however, depend on the availability of seats and Their qualifications/merit.

Note: Foreign nationals other than those under (ii) above, having Indian qualifications must take JEE.

National Science Talent Search (NSTS)

The candidates, who have basic qualification which would entitle them to take JEE and have passed the National Science Talent Search Examination, are eligible for admission to Science and Agricultural courses only.

Age: Candidates must not be more than 21 years as on 1st October 1977. Upper age limit is relaxable by five years in the case of Scheduled Caste/Scheduled Tribe candidates, three years for Foreign Nationals, Repatriates and New Migrants.

ALL COMPLETED APPLICATIONS MUST BE SENT TO THE DEPUTY REGISTRAR (ACADEMIC), INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY 400 076

LAST DATE FOR ISSUE OF APPLICATION FORMS: MAY 21, 1977.

LAST DATE FOR RECEIPT OF COMPLETED APPLICATIONS: JUNE 30, 1977.

Detailed information and application forms can be had from the respective Zonal IITs either in person or by post on a written request alongwith a self-addressed unstamped envelope of at least 28 x 13 cm. size superscribed 'DIRECT ADMISSION TO B.Tech./M.Sc./M.S./B.Sc.' together with Indian Postal Order of Re. 1/- (Rupee One Only) payable to 'Indian Institute of Technology.'

Receipt of application forms on a certain date shall not be considered as a valid reason for late submission of applications. Candidates are advised to request for forms well in advance.

UNIVERSITY OF GORAKHPUR
GORAKHPUR

No. 136/GA/77 Dated March 31, 1977

ADVERTISEMENT NO. 4

Applications on the prescribed form (8 copies) available from the office of the Registrar on payment of Rs. 5/- for the post of Professor/Reader and Rs. 2/- for the post of lecturer as registration fee payable in cash or Postal Order drawn in favour of the Registrar, University of Gorakhpur, Gorakhpur by name, are invited so as to reach this office through the employer, if employed, not later than 30-4-77 for the following posts :—

1. Lecturer 21 posts as under :

Economics	1 (One)	Permanent
Sociology	1 (One)	Temporary
Philosophy	1 (One)	Permanent
Mathematics	2 (Two)	Temporary
Sanskrit	2 (Two)	Out of which one temporary and one permanent
Geography	1 (One)	Temporary
Zoology	2 (Two)	Temporary
English	5 (Five)	Four permanent and one temporary
Law	3 (Three)	Temporary
Statistics	1 (One)	Temporary
Pol. Science	1 (One)	Permanent
Tibetan	1 (One)	Permanent

Scale of pay —700-40-1100-50-1600

Qualifications :

- (a) A doctorate in the subject of study concerned or a published work of a High standard in that subject, and
- (b) consistently good academic record (that is to say the over all record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks) Masters degree in the subject concerned or equivalent degree of a foreign University in such subject.
- Where the Selection Committee is of the opinion that the research work of a candidate as evidenced either by his thesis or by his published work, is of a very high standard, it may relax any of qualifications specified in sub clause (b) of clause (1).
- If a candidate possessing a qualification in sub clause (a) of clause (1) is not available or is not considered suitable (due weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed on the condition that he will attain the prescribed

qualification (namely doctorate or published work as aforesaid) within 5 years from the date of his appointment.

Provided that where the teacher so appointed fails to attain the prescribed qualification within the said period of 5 years, he shall not be entitled to yearly increments after such period, until he attains such qualifications.

In the case of Faculty of Law, the minimum qualification for the post of Lecturer in the University shall be degree in Master of Law.

2. Reader—(a) (Vth five year plan posts : see footnote):

10 posts—one each in the departments of Military Science; Sanskrit—Pali and Prakrit; Urdu, Sociology, Med. & Mod. History; Geography; Psychology; Fine Arts & Music; Education and Law

(b) 4 posts permanent—2 in Chemistry and one each in the departments of Political Science and Law.

Scale of pay—Rs 1200-50-1300-60-1900

Qualifications—

Persons should possess the minimum qualification prescribed for the post of a Lecturer as mentioned above and in addition, the candidate should have :

- Post-graduate teaching experience of atleast 5 years.
- Capacity of conducting and guiding research.

In exceptional cases, the Selection Committee may relax the above qualifications in view of long teaching experience and research work of a high order.

- Professor—(a) (Vth five year plan posts—see footnote) 11 posts—one each in the department of Physics, Chemistry (for quantum statistical Mech.) Botany, Zoology, Mathematics, English, Hindi, Political Science, Philosophy Economics and Commerce.
- (b) 4 posts—2 permanent, one each in Commerce and Economics; 2 temporary One each in the department of Botany and Zoology.

Scale of pay :—1500-60-1800-100- 2000-125/2-2500

Qualifications :—

Persons should possess the minimum qualification prescribed for the post of a lecturer as mentioned above, and in addition, the candidate should have a reputation of eminent scholarship and must have published standard research work to his credit and should have considerable experience of guiding research. No teacher appointed before 26 January, 1977 shall be deemed to be qualified for appointment to the post of Reader or Professor if he does not possess the qualifications mentioned above provided that where the Selection Committee is of the opinion that the research work of a candidate as evidenced by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in such clause 1(b).

In the case of appointment of a Professor, the Committee may with the approval of the Vice-Chancellor consider the names of persons who have not applied.

The candidates will be required to appear for interview, if called, at their own expenses. The Selection Committee may recommend higher initial salary to a person specially qualified for the above posts. It will be open to University not to fill up any post advertised. Canvassing in any form by or on behalf of the candidate will disqualify him.

NOTE :

All posts sanctioned under the 5th five year plan are initially on a temporary basis.

M. G. Gupta
REGISTRAR

University lews

A CHRONICLE OF HIGHER EDUCATION & RESEARCH JUNE 1, 1977 80 PAISE



West German Foreign Minister, Mr. Hans-Dietrich Genscher, receiving the honorary degree of Doctor of Science (Honoris Causa) from Mr. G. Narayanamurthi, Acting Director of IIT, Madras at a special convocation held at the Institute

GURU NANAK DEV UNIVERSITY AMRITSAR

Advertisement No. 8/77

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University, Amritsar by making a written request accompanied by a self-addressed stamped envelope of 23x10 cms. so as to reach this office by **June 14, 1977** from persons residing in India and by **June 21, 1977** from persons residing in foreign countries, alongwith crossed postal order (s) for Rs. 7.50 drawn in favour of the Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

NOTE: Persons already in employment must send their applications through their employer.

Grade (plus allowances as admissible under University rules).

1. **Professors** (Grade Rs. 1500-60-1800-100-2000-125/2-2500) in Chemistry, Physics, Economics, Mathematics, Political Science and Sociology.
2. **Readers** (Grade Rs. 1200-50-1300-60-1900) in Biology, Chemistry, Physics, Psychology, Economics, History, Punjabi, Law, Political Science and Hindi.
3. **Lecturers** (Grade Rs. 700-40-1100-50-1600) in Biology, Physics, English, History, Law, Political Science, Mathematics (Statistics), Sociology, Russian, German, Persian. Lecturers in Commerce for University Evening College, Jullundur.

QUALIFICATIONS:

For the posts of Professors and Readers

(i) A Doctor's degree or published work of an equally high standard; and (ii) consistently good academic record with 1st or high 2nd Class (b+) Master's degree in relevant subject or an equivalent degree of a foreign University. (iii) About 10 years' experience of teaching post-graduate classes and guiding research in the case of Professors. About 5 years' experience of teaching post-graduate classes and post-doctoral research work in case of Readers. (iv) Knowledge of Punjabi and a foreign language other than English will be an additional qualification.

For the posts of Lecturers:

(i) A Doctor's degree or published work of an equally high standard; and (ii) Consistently good academic record with 1st or high 2nd Class (b+) Master's degree in the relevant subject or an equivalent degree of a foreign University. (iii) Teaching/research experience and knowledge of Punjabi and a foreign language other than English will be additional qualifications.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (ii) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record

(due weightage being given to M. Phill. or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's degree or give evidence of published work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

EXPLANATION: Consistently good academic record means overall record of all assessments throughout the academic career leading to Master's degree, which should at least be b+ or high Second Class.

SPECIALIZATION

CHEMISTRY: Professor: (i) X-Ray Diffraction for structural elucidation of molecules. (ii) Quantum Chemistry or Theoretical Chemistry.

Readers: Thermodynamics and Quantum Chemistry or Organic Chemistry.

PHYSICS: Professor: Experimental solid state Physics/modern spectroscopy including magnetic resonance & high resolution spectroscopy. **Reader:** Modern Spectroscopy/experimental solid state Physics. **Lecturers:** Nuclear theory/solid state theory/experimental nuclear Physics/experimental solid state Physics and spectroscopy.

ECONOMICS: Professor: Macro Economic theory and money and banking with good grounding in quantitative methods. **Readers:** Economic Statistics with strong Mathematical background.

POLITICAL SCIENCE: Professor: Political Theory or International Politics. **Readers:** Public Administration (possession of a Master's degree in Public Administration is desirable).

BIOLOGY: Readers & Lecturers: Ecology/Animal Physiology/Plant Physiology/Experimental Embriology/Bio-Chemistry (Animal)/Plant Systematics/Genetics/Biosystematics/Population Biology/Molecular Biology/Microbial Genetics or any other modern and interdisciplinary area in Biology.

PSYCHOLOGY: Reader: Experimental Psychology, preferably in the area of learning, perception, personality, cognition, motivation and Psychopharmacology.

HISTORY: Reader: (1) Modern Indian History. **Lecturer:** (1) Medieval Indian History.

LAW: Readers: Constitutional Law/Family Law. **Lecturer:** Property Law and International Law.

HINDI: Reader: Medieval Literature & Philosophy and History of Hindi Literature/Linguistics and stylistics/Modernity and Aesthetics.

ENGLISH: Lecturer: Linguistics in addition to British Literature. **MATHEMATICS: Lecturer (Statistics):** Knowledge of Computer Programming/Operational research/Bio-Statistics, Econometric. **SOCIOLOGY: Lecturer:** Social Psychology/Family & Kinship.

Registrar

LUCKNOW UNIVERSITY

Advertisement No. 10/1977

Applications are invited for the following posts in the K. G. Medical College,

Lucknow University:

1. One Professor of Medical Chemistry and Chemical Pharmacology in the Department of Pharmacology & Therapeutics in the grade of Rs. 1200-50-1500-1800.

QUALIFICATIONS:

Essential: M.Sc. (Organic Chemistry) or M.Sc. (Biochemistry) and Ph.D. or D.Sc. in Biochemistry or Organic Chemistry.

Candidates must possess five years' teaching experience in the subject concerned as Reader or in an equivalent post.

Private/consulting practice not allowed but if the candidates also possess medical qualifications viz. M.D./M.S./F.R.C.S./M.R.C.O.G./or equivalent they will be paid non-practising pay @ 25% of the pay and non-practising allowance @ 25% of the pay subject to a maximum of Rs. 300/- in each case.

2. One temporary Professor of Dentistry (Pedodontia) in the Department of Dentistry in the grade of Rs. 1200-50-1500-1800.

QUALIFICATIONS:

Essential: B.D.S. or equivalent qualification with a good academic record and post-graduate qualifications (M.D.S.) or its equivalent.

Candidates must possess five years' teaching experience in the subject concerned as Reader or in an equivalent post.

Consulting practice in the speciality allowed provided it does not interfere with the official duties. The University will, however, be free to restrict or abolish consulting practice altogether at its discretion in which case the prescribed non-practising pay and non-practising allowance, will be given.

GENERAL:

For purposes of qualifications for the above posts, the degrees obtained in a subject taught in a Department which is subsequently constituted into separate department, shall be deemed to be degree in the subject concerned, for the newly constituted department.

Special training or experience in the speciality concerned, shall be an additional essential qualification.

Relaxation in the prescribed qualifications may be made in exceptional circumstances in accordance with the Ordinances.

Benefits of Provident Fund available for post No. 1 as admissible under the rules, on confirmation. Period of probation for the post is one year.

The University reserves the right to fill both/any of the advertised posts.

Applications in the prescribed form (available on request, free of cost, from the office of the Registrar, with a self addressed envelope 23 cm. x 10 cm) with recent testimonials, publications etc. should reach the Registrar, Lucknow University by **Saturday June 25, 1977**. Candidates who are in service should send their applications through proper channel. Application forms to out-stations, will be issued upto Friday, **June 17, 1977**.

Sd/-
(B. N. Singh)
Registrar

UNIVERSITY NEWS

Vol. XV
No. 11

JUNE 1
1977

A Fortnightly Chronicle of Higher Education Price
80 Paise

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Editor : ANJNI KUMAR

Problems of Illiteracy

R. C. Mehrotra*

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Literacy and National Development

In developing countries like India, there is an increasing concern about the seriously adverse effects of illiteracy on the economic, social and political development of the nation. Efficiency and productivity of the farmer in the field or the worker in the factory appear to be markedly influenced by his capacity to acquire knowledge and skills through education and training which is not possible without his being literate. With the immensity and complexity of problems in our country, separate attempts to break the vicious circle between underdevelopment and inequality in educational opportunities have been doomed to failure from the very start. Consequently, the need for an integrated approach which attempts to deal with both of these problems jointly is beginning to be realized more and more.

Before I proceed any further, let me clarify that although literacy and education can serve as the most important catalysts for social change and economic development, yet there is no direct correlation between the literacy or even education of a person on the one hand and his social outlook, innate wisdom and capacity to take decisions on the other. The illiterate masses of different regions in the world have throughout history displayed a surprising awareness of the problems of the society around them and have contributed even with their empirical knowledge significantly to the advancement of techniques in their individual professions.

It must, however, be admitted that there has been in the past few decades a phenomenal rate of increase in the quantum of human and social knowledge in all fields and the society is becoming more and more dependent on the extremely rapid advances in the fields of science and technology, not only in areas of productivity and economic growth but more recently, even in the quality of life itself in such all pervading aspects such as availability of fresh air to breathe and clean water to drink. In order that the human society is able to face the new challenges in a meaningful manner, it is becoming more and more imperative that there is a clearer understanding and appreciation of the problems in the masses of society. It must be admitted that mere literacy would not be sufficient in these directions, but capacity to read and write does make an individual autonomous in his access to knowledge. In fact, as is true in all aspects and stages of education, a thirst for knowledge and desire to continue to add to one's understanding are of much greater importance than mere introduction to the 3R's. The passion for knowledge thus aroused would help the parents in overcoming the immediate greed which tempts them to keep their children away from school

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for the short-time benefit of manual help from them to the family. In fact, some UNESCO studies have shown that even the education of children is more effective when their parents appreciate the value of knowledge and awareness of the growing complexities of the presently fastly developing complex society.

When India got her independence in 1947, the percentage of literacy was as low as 14, which meant that out of a population of approximately 40 crores, more than 34 crores were illiterate. According to the present estimates, the percentage of literacy has increased to about 35 which, when translated into actual figures, means that out of a population of about 60 crores approximately 39 crores continue to be in the illiterate group. These figures clearly affirm that in spite of the policy adopted in the Constitution for universalization of primary education by 1960 and also in spite of numerous efforts for adult literacy by different agencies, the total number of illiterates in the country instead of diminishing has increased from 34 to 39 crores. What is even more painful and even shocking to a nation, rightly proud of its cultural heritage, is the fact that this high figure of 39 crore illiterates represents approximately half of the total number of illiterates in the entire world. Let me, however, before ending this statistical analysis on merely a pessimistic note emphasize the fact that starting with nearly 5 crore literates in 1947, we have today in the country more than 18 crore literates, after making an allowance for the number of very young children. This depicts an impressive growth rate of about 45 lac literates per year in the country during the last three decades.

Status of Illiteracy in the World

This brings me to a brief review of the status of illiteracy in the world as a whole. In 1971, the number of illiterates in the world was estimated to be about 78 crores. In spite of massive efforts at the national and international levels at increasing the provisions for primary schooling and adult literacy, the number of illiterates in the world instead of falling, is estimated to increase to about 82 crores by 1980. Obviously, these illiterates are not spread evenly in the world, but they are more concentrated as could be expected in the developing regions. Three-fourth's of them are to be found in Asia, where these constitute about half the adult population. A further fifth are in Africa. The remaining 5% are distributed between Latin America, Europe and North America etc. In Asia itself, the percentage of adult illiteracy was estimated in 1971 to range from 88 in South Korea to 23 in Bangla Desh, with India standing nearly at the bottom at 29%. In addition to the heterogeneous distribution in the population as a whole, discrepancy in male and female literacy is also universal. A second general dichotomy exists between the rural and urban areas and the third difference is between the rich and the poor. In short, the highest incidence and increasing rates

of illiteracy are usually to be found among the women, the rural and the poor, which are precisely the groups crucial in population planning and rural development. In its publication, entitled 'Literacy' 1969-71' the UNESCO has drawn a depressing conclusion that 'despite steady gains, world adult illiteracy is not a problem that will be solved during the 20th century'. It has been further concluded in this document that despite growing expenditure on schools, the literacy gap cannot be bridged by the formal school system alone.

This brings us to the importance of tackling the problem of illiteracy outside the formal school system. It is only in a few countries where the governments have supported literacy campaigns on a mass scale. Outstanding examples, in terms of total population coverage, have been the mass campaigns in countries like Cuba, China, Russia, Indonesia and Yugoslaviya. In Cuba, formal education in the secondary schools and universities was actually suspended for some years to enable students and teachers to devote their full-time in the literacy campaign. In China, a notable feature has been the emphasis on literacy programmes for women in which even middle school students participated in a very effective manner.

Need for a Mass Literacy Campaign

In India a few mass literacy campaigns, inspired by Mahatma Gandhi were initiated by the Congress Governments which came into being for a short while in 1937. However, since 1947 much greater stress has been placed in free India on the universalization of primary education. Provision was, therefore, made for free compulsory primary education even in the Constitution itself. In spite of considerable efforts in this direction, the target of 100% primary education by the year 1960 has not been even so far achieved. In addition to the problem of initial enrolment, the factors of stagnation and wastage continue to affect adversely the overall achievements in enrolments. Unfortunately, these latter deleterious effects are also more prominent in poorer regions. Obviously, efforts in all these directions should certainly not only be continued, but will have to be accelerated for achieving the targets as early as possible. In addition, it is absolutely essential that as a complementary programme, much greater stress should be laid on organized efforts for Mass Adult Literacy under an overall extensive Mass Adult Education Programme. The principal agencies responsible for organizing and conducting the Adult Literacy work, have been the State Governments with the financial and other assistance from the Central Government. In addition, the Central Government has since 1953-54 been giving assistance to voluntary organizations on the basis of an increasing proportions of their expenditure.

All these efforts put together have certainly been able to make a dent, but the over-all progress has been far from satisfactory. Recent statistics for twenty countries have shown that the number of illiterates continues to be on the increase in countries with illi-

teracy rate of 70% or above, but it tends to decrease in regions where the figure is below 35%. These two figures thus seem to constitute two critical thresholds. It can therefore, be inferred that in any country the struggle against illiteracy can be deemed as succeeding only when the percentage of illiterates is brought below 35%. This obviously points to the essential need of a much more organised and concentrated multi-pronged attack on the problem in the initial stages till the percentage is brought below the critical limit of 35%. There are two obvious ways of dealing with the problem. The first could be through the provision of adequate financial requirements from the public exchequer, but this approach alone cannot be successful as the amounts of inputs required, even at a modest scale of Rs. 50 to 100 per adult, would become prohibitive for the present economy of the country. The second course is to coordinate the official efforts with voluntary services on the basis of a mass movement in the country. Out of many efforts on a mass scale attempted in the different parts of the country, the mass approach of Gram Shikshan Mohim of Maharashtra is worthy of special mention. In this project, the whole village has been taken as a unit for the literacy effort and the objective is to make the entire village literate in about a year or so. The main approach of this is that the village community is actively associated with the project and voluntary contributions from the village itself tend to reduce the overall external inputs required. Much greater emphasis is placed in this programme on the motivation for literacy being created by the decision of the people themselves to become literate. It is they who impel the teachers to make them literate instead of the teacher persuading the illiterates to come to the literacy classes as is the case in the usual programmes of literacy. Organized in a competitive manner, the movement has a naturally contagious effect as no village likes to lag behind its neighbour in such a programme of self-improvement and development. Finally the shortage of qualified teachers is overcome by enlisting enthusiastic educated volunteers and even children studying in higher classes who are given a brief orientation programme. For a voluntary mass movement of this type, the willing and enthusiastic cooperation of teachers and students at various levels is absolutely essential. With about 35 million students, including approximately 20 million at the middle school level, 11 million at a High School level and 4 million at the College level, we have an army which if motivated to make 10 adult per person literate in a year could wipe off illiteracy from the face of the country. Of course, the time taken would be proportionately higher if the actual number of adults who could be made literate by each student and teacher falls below 10, but even if the percentage of literacy could be brought below the 35% critical threshold within a year or two, it would be a great achievement. There are already liberal provisions for free-ships and other facilities for students at various levels. If these could be tagged on to the amount of effort put in this task of

national importance and the students could be recompensated for such efforts, then there can be some in-built incentives for the scheme as well. Even in a University like Delhi situated in a sophisticated metropolis, the students joining the N.S.S. have shown commendable zeal in these directions which should make us optimistic that the efforts of the youth, if properly channelized, could tackle this problem much more efficiently.

Functional Literacy and Role of Institutions of Higher Learning

Some reference has already been made to the importance of sustaining the gains of the literacy efforts. In this direction, the more recent thinking lays much greater emphasis on the introduction of vocational and other components of maximum relevance to the learners. The term Functional Literacy, which appears to be emphasised more and more, appear to have come into its own at the World conference of Ministers of Education on the Eradication of Illiteracy held by UNESCO at Tehran in 1965. The Kothari Commission in 1966 in our country had also rightly emphasised this aspect of adult education, which according to the Commission should provide every adult citizen with an opportunity for education of the type which he wishes and which he should have for his personal enrichment, professional advancement and effective participation in social and political life. Functional literacy programmes should be based on much more intensive but diversified curricula tailored to the needs of a particular group and these should be coupled with the conventional curricula involving the 3R's. Efforts should be made to integrate the literacy, vocational and other components so that these do not necessarily follow a set sequence but proceed simultaneously depending upon the motivation, competency and resources of a group. In order to achieve optimum results within the shortest time possible, effective use should be made of all appropriate educational technology like visual aids and mass media.

Another direction in which much more attention is called for could be the production of relevant and useful literature for neo-literates in regional languages. The role of a net work of public or even mobile libraries in these directions cannot be over-emphasized. Publication of village newspapers like 'Kibaru' in Mali and 'Game Su' in West African state of Togo under a UNESCO project are just another illustrative examples of experiments being attempted to sustain the initial benefits of Literacy programmes. Obviously, universities and other institutions of higher learning should be involved in an effective manner for chalking out relevant programmes suited to our own conditions, which also vary so widely from region to region. It is only with the willing and enthusiastic cooperation at all levels that we may hope to remove the scar of illiteracy from the face of our nation, enabling the citizens to play their due role in its social, cultural and economic development.

[Courtesy : Spotlight Programme, AIR]

Youth Activities in University

D. H. Goswami*

The University is a temple of learning where young persons are given instructions to gather knowledge by acquiring facts, figures and formulae. More important is whether one's intelligence enables one to make use of the acquired facts and figures to enrich the fundamental knowledge in various disciplines and for meaningful research. The function of university becomes obsolete if it does not teach students to solve the daily problems of life, through their learning and research and further students should derive a sense of inner satisfaction while they acquire their knowledge by way of formal education. Perhaps, it will not be a sweeping comment if it is said that our universities lose themselves in verbiage; we are prone to emphasise on didactic teaching, abstract thinking and academic type of research which are of very little value in solving our day to day life's problems. The turn-out of Ph.Ds in galore of various universities, on topics of research, bear eloquent testimony to this fact.

Apart from academic leanings, the youth, while in the university, try to organise unions for various extra-curricular and co-curricular activities but in most universities, the unions degenerate themselves into a sort of weapon to wage constant and frequent 'little-wars' against administration. Ironically a handful of students guide the destiny of such unions; the large majority of students are either apathetic or get themselves occupied with other activities like drama, music, games and sports, debates etc. The 'Union' members have, either some political leanings or more often than not they are being utilised by politically motivated people as their tools. Their activities seem entirely devoid of any purpose; they engage themselves in blurred and hazy goals, having very little relevance to the solving of the pressing social and economic need for upliftment of the society. The long-awaited need for thought and action for the poorest amongst the poor to get out of want and misery, hardly concern the 'Union'. On the contrary the 'Unions' wallow themselves in pettifogging. But of late, there has been a departure from the above position and the U.G.C. along with many universities are trying their best, through change of syllabi and examination system, to make education realistic and meaningful.

The famous Spanish thinker Jose Ortega Gasset observed; 'Man does not exercise his thought because he finds it amusing, but because obliged as he is to live submerged in the world and to force

his way among things, he finds himself under the necessity of organising his psychic activities, which are not very different from those of the anthropoid, in the form of thought—which is what the animal does, not do Man then, rather than by what he is, then by what he has, escape from the Zoological scale, by what he does, by his conduct..... We do not live in order to think..... We think in order to succeed in subsisting or surviving.'

Rural people and rural development have received a tremendous boost in recent years. But then it will be a folly to assume that only the poor need to revive the conditions of men, the rich need it as much as the poor, though their needs may altogether be different. The rich may be or can be trained in a particular way to share his wealth and prosperity with the needy so that society as a whole receives a boon. It is for the youth to organise activities so that people as a whole lift themselves up, because poor or rich, it is not difficult to lose the condition of being man. For example, knowledge concerning some problems of health, education, some topics of home and family interests, hobbies, arts, cultural and public affairs can be effectively assimilated by the receiver. In activities like this, radio and television can play a very effective and significant role. Vacations could be used by a host of employers—restaurant owners, vegetable farmers, garage proprietors, business-concerns to engage the youth in purposeful work, because students on holiday often make up in enthusiasm what they lack in experience. But the important point that the youth may not forget is that an opportunity to serve is much more important than getting paid for the work rendered.

In our country the functional literary programme has come to stay, but there is a marked shift of emphasis from the traditional 3-R's concept of literacy to the new 3 F's programme of functional literacy, food production and family planning. All over the country the universities through their NSS activities are engaging themselves in such programmes which concern, to a very large extent, on non-formal education. It will also be worth-while if the students also can develop their latent talents in arts, culture, games and sports without in any way interfering with their formal education and this could be done by arranging programme during holidays i.e. summer and winter holidays.

Our youth should understand that Mahatma Gandhi was the greatest martyr of secularism, and also of socialism. They should understand the real spirit of secularism before they start preaching on the subject. Some of our 'radical' youth consider secularism as something similar to atheism—the negation of religion and everything associated with it. Such notion lead the youth up by the garden path; without moral fear and without conscientious awareness of one's responsibilities it is well-nigh

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(Continued on Page 297)

Grading System in University Examinations

V. Natarajan*

As a part of research activity of the Association of Indian Universities it was decided to undertake a research study to analyse the results in various undergraduate examinations with a view to design a sound, stable system of Grading in these subject areas.

Objectives

The following would be the main objectives of analysing the results and designing a sound, stable grading system :

1. Determination of range of marks, in subjects like Languages, Literature, Humanities, Psychology, Philosophy, Economics, History, Geography, Commerce, Mathematics, Physics, Chemistry, Zoology, Botany, corresponding to percentages on 9 point scale as per Prof. Barrow, Prof. Dandekar and Dr. Hill (detailed out in paper on "Grading" for the University of Madras, Workshop (Dec. 22-23).
2. Construction of Normative Standards in different subjects from the results of the last 3 years from one particular university.
3. Design of a Grading system for these subjects based on 1 and 2 above, after comparing the 5 point, 7 point and 9 point scales.
4. Publication of a Monograph on Grading for University examinations incorporating the results of the Research Study.
5. Design of grading system to establish National Standards after Coordinating the studies of atleast 10 universities on these lines.

Scope

In order to get the results, a university which will willingly cooperate, will be taken and a questionnaire will be prepared and sent to it. If necessary, discussions will be held with Officers-in-charge of Examinations in the University to finalise format for return of results in different subjects. A questionnaire will be sent inviting information from teachers of these subjects to respond to 5 point, 7 point, 9 point scales and percentages of students who would obtain these grades in different subjects. A standard will be prepared in terms of percentages in these categories and this will be used to prepare Normative standards.

Normative table in a subject will give details of percentages (finalised as above) and ranges of marks

corresponding to these percentages (obtained by analysis) in all the 3 years' of examination in these subjects.

Design of a grading system will be made after comparative study of better distinctions amongst students in respect of 5 point, 7 point and 9 point scales.

A Monograph can be prepared on Grading in University Examinations which can be taken as a guideline for individual university examination unit to undertake such a study.

The Research Cell had taken 10 universities spread over the country and got these projects of Design of Grading System on the lines found in the Monograph, started. Coordination of these and compilation of a comparative study of these Grading System helped the Research Cell to propose National Standards.

Procedure

1. The selected university will be requested to send the marks obtained by 10% random sample of their students in different subjects for the last 3 years.

2. A questionnaire will be sent soliciting the views of teachers of different subjects (atleast 10 to 12 per subject area) on 5 point, 7 point and 9 point scales; percentages of students in these grade categories incorporating both fixed response and free response items.

3. Ranges of marks in different subject areas for the last 3 years for percentages of students on these categories will be worked out for the results by the Research Cell.

4. Normative standards for different subjects will be prepared and a choice made amongst 5 point 7 point and 9 point scales, if possible.

5. A grading system that is stable, since the performance of peers over the years has been considered, will be designed.

6. A Monograph will be published incorporating the results of this study at this stage.

The Monograph will invite other universities (specially the selected universities) to undertake such a study on the lines described to formulate a Grading System. Such studies will be coordinated, initiated and compiled by the Research Cell. It is suggested that a minimum of 10 universities must atleast participate in this.

7. It is possible now to propose National Standards on Grading scientifically.

Planning

- (1) Stage I : Obtaining from an university results of the last 3 years of students in their first degree subjects/postgraduate subjects.
- (2) Stage II : Preparing a questionnaire to solicit views of teachers on 5,7,9 point scales; percentages of students in these grade categories.
- (3) Stage III : Analysing responses; finalising the three different grade systems; analysing

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for means, standard deviations, derived scores, etc.

- (4) Stage IV : Comparative study of all possible grading systems reporting.
- (5) Stage V : Getting atleast 10 other universities to do this (Stages I to IV), coordinating.
- (6) Stage VI : Finalising results, reporting, supplement to Monograph:

Description of tasks in different stages

Stage I

1. Choosing an university, 10 first degree subjects and 5 postgraduate subjects.
2. Preparing the format in which to obtain results in these, for the last 3 years.
3. Obtaining the results of students adopting 10%—20% random sampling if the population is large, in person.
4. Typing out these.

Stage II

1. Analysing the results of stage I for means, standard deviations and adopting suitable percentages for 5 pt, 7pt, 9pt scales for their different individual grade categories.
2. Preparing a brief note of 5pt/7pt/9pt scale grade category percentages in these subjects.
3. Preparing a questionnaire to solicit views from subject teachers on 5/7/9 point scales; on percentages of students in these categories.
4. Despatching questionnaire in (3) with note in (2) to teachers of the university.

Stage III

1. Consolidating the replies.
2. Adopting a suitable percentages for categories in all 3 grade systems.
3. Consolidating Stage II (1) results.
4. Analysing the proposed grade systems against (3) above.

Stage IV

1. Consolidating the 3 different grading systems.
2. Comparing them in terms of ranges of marks, number of students in each grade category, the discrimination level.
3. Choosing one of the three on the basis of (2).
4. Reporting the point scale recommended (and normative tables for each subject.

Stage V

1. Preparing a draft report of work from Stage I to IV.
2. Selecting 10 universities and sending draft report to all of them with a request to undertake a similar study.
3. Coordinating at different stages, through correspondence.
4. Collecting individual draft reports of these universities.

Stage VI

1. Comparative study of individual draft reports of universities.
2. Preparing a consolidated final report.
3. Writing up a supplement to Monograph.

Data Collection

A thorough literature survey was done and various systems in operation in our country (grading system in I.I.T's, agricultural universities) and in other educationally developed countries (USA, UK) were studied and a system was worked out and outlined (in a paper at the Madras University Grading Workshop Dec. 22-23). Results of examination marks of students in the last 3 years from two universities (Delhi & Madras) were obtained and analysed as outlined. In addition a questionnaire was prepared and administered on nearly 800 teachers (in Madras, Madurai and Delhi) and the data collected in terms of their responses. The analysis of the data through a computer yielded results that were incorporated in Monograph on Grading (second and third editions). Personal interviews with teachers were held and workshops on Grading were conducted in many universities and made use of to arrive at conclusions.

Analysis

The responses to various universities in the questionnaire were analysed and consensus worked out. Certain findings were reported in the Monograph in 2nd and 3rd editions.

The analysis of marks of students in 10 undergraduate subjects (Mathematics, Chemistry, Physics, Botany, Zoology, Psychology, History, Geography, Economics and Commerce) and 5 post-graduate subjects led to certain findings reported in the Monograph.

Findings

1. A comparative study of the three systems 5 point scale, 7 point scale and 9 point scale when applied to actual examination marks of these two universities yielded that 5 point scale is better than 7 point scale and certainly much better than 9 point scale. However, 7 point scale has been adopted by many universities in the country (at the instance of UGC) and this is a good starting point. Based on this major finding that 3 point scale is superior to 7 point scale universities will increasingly find it necessary to switch over to 5 point scale. This is corroborated by Dr. Harper's theoretical analysis of different point scales and the experiences of very many universities (like Princeton, Michigan) and in our own country in I.I.Ts.

2. The Normative Standard Table method proposed by AIU, Research Cell is highly suitable for large scale Examinations. Under these conditions the UGC method (outlined in their booklet) is found to over grade. This is a major finding and many universities have adopted our Normative Method with slight modifications (Delhi, Madras, Madurai, ISM Dhanbad, Mysore, Andhra, Rajasthan). Appendix C Monograph on Grading.

3. Direct Grading using 7 point scale is favoured for internal assessment.

4. Conversion of marks to grades (a transitional procedure) is to be based on Normative Table Method (AIU) for large scale examinations.

5. A system of grading restructured examinations with objective and subjective questions has been evolved (Appendix F—Monograph on Grading).

6. A facing sheet for an answerbook for adopting Grading System has been evolved and many universities have adopted it.

7. Randomization of answer scripts is an important step and prerequisite for adoption of Grading System.

Appendix L gives the summary of recommendations made to various universities/other bodies in respect of Grading incorporating the findings of this illuminative Research study.

It is necessary that this is to be repeated once in every year. A Monograph (in its third edition) incorporating the findings has become very popular and useful to universities. ☐

Youth Activities in University

(Continued from Page 294)

impossible to build up character and the right outlook so very important for the developing youth. Another glaring example of the loss of fundamental human values among young people who feel that respecting moral values is just the fancy of elderly people who are terribly out dated and may be also unwanted in a world of resurgent youth. A successful life, and a happy life, is possible only when one is able to adjust and adopt the different sides of the personality in a harmonious way and the entire personality with others that form the constituents of the world. After all it is youth who should prepare themselves to provide intellectual leadership to the country and also technical perfection through sheer hard endeavour. In order to do away with despondency and dissatisfaction, the youth should continuously and Consciously be aware of the fact that the future well-being of the country really lies in proper education, the accent and emphasis be placed on quality rather than on quantity.

People often say that man is a selfish creature, that his basic instincts concern only his personal welfare. But truly speaking man has a dual nature—he is at once selfish and selfless. He is concerned with his personal welfare to survive, yet he has the instinct to preserve the welfare of his group and if necessary he will die for it. The youth, especially, should feel joy in giving freely of his services and money, when possible, and if he does so he satisfies an instinctive desire. Giving of oneself for the betterment of the less fortunate is the cheapest and most effective mental therapy. Yet, in the midst of complexities and vicissitudes of life, the youth may rightly absorb themselves on their academic attainments, they may rightly think of their future career, they may rightly think of their obligations to themselves, but sadly enough they also wrongly tend to overlook the fact that the act of giving is also an act

of self-fulfilment. The joy of giving is a delightful experience and let the youths remember that when they help others up a steep hill, they got nearer to the top themselves. ☐

MANAGEMENT OF EXAMINATIONS

by

AMRIK SINGH

and

H. S. SINGHA

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No Peace without Prosperity

Mr. Hans-Dietrich Genscher, Minister for Foreign Affairs of the Federal Republic of Germany received the degree of Doctor of Science (*Honoris Causa*) at a special convocation of the Indian Institute of Technology, Madras. The Minister in his inspiring address said that peace and prosperity were inseparable. He said that if international community failed to realise this and act accordingly there was no hope for the world. It is important that all States, large and small, poor or affluent, should meet each other with respect and as equal partners, without at any stage trying to dominate others or to establish zones of influence or prescribe paths for others. Only if all the countries understand this lesson, they will be able to serve peace.

The industrialised countries which had opened their markets

and it would be possible to step it up substantially once the consequences of recession were over.

Stressing the importance of private capital he said that this brought with it technical know-how and modern management techniques. He suggested that greater long term security for the entering capital be provided by the developing country concerned. This was the quickest and the surest way to get both private capital and the associated technology. There were good prospects of several industrialised countries providing unrestricted transfer of technology to the developing countries in the years to come. He also emphasised the responsibility of the developing countries themselves for achieving accelerated development of their economies. All help from outside would lead to nothing if there was

politician and statesman of outstanding eminence, and as a dedicated parliamentarian for his expert knowledge in the areas of home and foreign affairs, he made a significant contribution to the realisation of peace and collaboration among nations. He is true representative of the people and the government whose contribution to the Indian Institute of Technology, Madras, is hailed as the largest educational project sponsored by the Federal Republic of Germany outside its national frontiers.

Mr. G. Narayanamurthi, Acting Director of the Institute, presented the scroll to the Minister.

Illiteracy—common problem of developing countries

Mr. A. M. M' Bow, Director-General of Unesco, on his visit to India, held discussions, with the Union Minister for Education and Social Welfare, Dr. P. C. Chunder. Analysing the problems of illiteracy and slow progress of universalisation of education in the developing countries, Mr. M' Bow observed that such problems had arisen because of the adoption of the western system of formal education by developing countries. Political will is a necessary pre-requisite to overcome the problems of illiteracy. He said that any successful education system should be relevant to the situation in the country concerned, promote cultural identity and fulfil governmental objectives. The Director-General underlined the need of a link between work experience and education. By bridging the gap between the two, the load on society can be considerably reduced. Similarly higher education should also be linked with research and productive work. He said India could draw upon the experience acquired by the Unesco experts in the field of training workers in other countries.

Convocation

to the products of the developing countries should open them still wider. The Federal Republic of Germany has considerably increased its imports of not only primary commodities but also manufactures from the developing countries. The imports during 1975 increased by 25%. In the following year they went up to 17% in real terms. The imports from India increased not less than 55%. West Germany had played its role remarkably well in helping to bring about world economic recovery and render substantial contribution to the growth process of the developing countries.

The Minister noted the substantial capital flow from his country to the developing countries including India, both Government and private capital. He said that the industrialised countries should provide for greater capital outflow

no political will in the developing country to mobilise the resources that had laid fallow and pursued suitable policies for significant increases in production and productivity. The outlook was good with all the countries of the world increasingly becoming aware of their inter-dependence and trying to be complementary in their economic activities. The Federal Republic of Germany for its part was pledged to achieving a new and more just international economic order in which the industrialised countries would have stable growth and the developing countries would be in a position to achieve accelerated development of their economies and banish hunger and privation from their midst.

Prof. P. Venkat Rao read the citation. He said that Mr. Genscher had won worldwide renown as a

Inservice programme for new faculty members

The idea of a training programme for university teachers is rather new. A lecturer in a university is required to take up his full load of teaching from the first day of his appointment. He starts teaching without any orientation to methods of teaching. He designs his lectures without being given a deeper insight into the purposeful organisation of his lectures. He lacks the proper understanding of the adolescents to whom he teaches. He prepares question papers and assess the answerbooks without receiving a scientific knowledge of evaluation techniques. He has no grounding to organize tutorials, seminars or workshops. There is no tradition in our universities where a junior consults his seniors on professional matters. Nor is there a tradition under which a departmental head imparts regularly phased guidance to the new entrants in the profession. The enthusiastic recruit is left to himself and all the competencies in course of time are gained by him through trial and error.

The Education Commission (1964-66) emphasized in concrete terms the need for a training course for fresh and newly recruited university and college teachers. It was pointed out that for such lecturers some suitable form of training or orientation course is essential to give them a reasonable understanding of educational objectives and purposes. This would help them in overcoming initial teaching trouble and would create a sense of confidence. The Education Commission has rightly pointed out that teaching is a skilled profession like other highly skilled professions and training should be an essential qualification for the new entrants.

After the report of the Commission a few institutions have started taking steps to launch orientation programmes for the teachers of higher education. The University Grants Commission

initiated a scheme in 1970 to organise summer institutes for the orientation of juniors and fresh lecturers in methods of teaching. The Maharashtra Government initiated such a scheme for lecturers of junior colleges. It presupposes that the new entrants to the teaching profession are not fully equipped to deliver the subject matter according to the needs, aspirations and age of the students. The campuses of Bombay and Poona Universities run regular courses on teaching methods for college lecturers. The Calicut University has a similar programme. It has initiated a pre-service course of Master of College Teaching (MCT) which prepares lecturers for colleges and universities. The Department of Education of the University of Madras, on the other hand, has initiated an inservice course on university teaching methods for the lecturers. Similar courses are being contemplated by the Osmania and Mysore Universities.

The Department of the Faculty of Education and Psychology of the M.S. University of Baroda, which is engaged in the education of teachers for BEd, MEd and PhD levels has thought it worthwhile to undertake an additional responsibility of organizing inservice course in methodology of teaching for fresh and newly recruited lecturers of the university. The department has set up a unit on higher education with the help of University Grants Commission in 1975 and the task to organise the methodology course has since been entrusted to this unit. This part-time course with a total of 72 working hours lays emphasis on : (i) making teaching effective ; (ii) improving lectures ; (iii) setting better examination papers ; (iv) conducting seminars and tutorials ; (v) motivating youth for higher education ; and (vi) sharing the experiences of each other. The unit

has taken up the responsibility to organise the inservice course on methodology which will be termed as 'seminars on higher education'. The work of the unit can be conveniently considered under two phases. In the first phase the unit concentrates to create a climate for this innovative course and in the second phase to implement the scheme as adopted by the Syndicate of the university.

Phase I

In an attempt to create a favourable atmosphere for the new course on higher education three seminars were organised by the University during 1975-76. These were on (i) Teaching Methods in Higher Education; (2) University Governance ; and (3) Examination Reforms in University. The seminars were well attended and were organised with a view to creating a forum where university teachers met to understand the problems of higher education, finding their solutions and disseminating the innovations that are taking place in the university and elsewhere. A seminar on methods of teaching and evaluation in higher education was organised during April 1976 with the financial assistance from the University Grants Commission. The unique feature of the seminar was that it consisted of university and college teachers of different disciplines; viz., Physics, Chemistry, Mathematics, Psychology, Home Science, Social Work, Education, Political Science, Agriculture and the like. Twenty-eight university professors, readers and lecturers from eight States, namely, Gujarat, Punjab, Rajasthan, Madhya Pradesh, Andhra Pradesh, Tamil Nadu, Maharashtra and Delhi participated. Twenty-four teachers of Baroda University were the other participants. During the course of four days detailed discussions on teaching methods for universities, examination reforms and the role of university departments of education in the improvement of teaching and evaluation in higher education, were held.

Phase II

The actual programme of in-service training on methodology of teaching and evaluation at university level for the lecturers of Baroda University started in the month of July 1976. Forty-nine teachers agreed to participate in the course. The break-up of the participants department-wise is as follows : Home Science 5; Botany 2; Museology 1; Technology 4; Polytechnic 3; Philosophy 2; Psychology 1; Music 9; Education 7; Art and Painting 2; Physics 3; Chemistry 2; Statistics 1; Microbiology 2; Padra College 2; Pharmacy 1; Archaeology 1; Economics 1. Besides the newly appointed lecturers, some of the research fellows also joined the seminars. The group therefore worked as a forum of the experienced and fresh teachers of the University. Considering the diverse nature of the group the syllabus was drawn on inter-disciplinary approach. Topics of common interests from the areas of teaching, evaluation and general problems of higher education were incorporated in the draft syllabus as listed below:

Course Outline:

(A) **General Topics** : (1) Objectives of Higher Education; (2) University Governance; (3) Unrest among students ;(4) Achievement and motivation; (5) Psychology of teaching; (6) Vitalizing classroom through audio visual aids; (7) Creativity in teaching : (B) **Teaching Methods**: (8) Lecture method; (9) Discussion method; (10) Tutorial system; (11) Multi media approach; (12) Programmed learning ; (13) Teaching through project method ; (C) **Evaluation** : (14) Assessment in the discipline of creative arts; (15) Internal assessment : (16) Grade system; (17) Question bank; (18) Continuous assessment. Besides the theoretical lecture-cum-discussions there were sessions for practical work. Three sessions were spent on micro-lectures. The participants delivered a lecture for ten minutes on their subject before the group. The lecture was taped and replayed

for the auto-correction of the lecturer. The other participants also gave feed back for the improvement of teaching the topic. They were supplied enough reading material and were given home assignments to be completed. The whole approach organizing this course was to involve the participants actively in the academic discussion. The main emphasis was placed on the sharing of experiences. The speakers on different topics initiated discussion for an hour and for another hour discussion by the participants was encouraged and some of the sessions were lively as the topics were thoroughly discussed. The speakers tried to evolve a consensus on the subject.

Team work in scientific research

Dr. R. Ramanna, Director, Bhabha Atomic Research Centre, Bombay, addressed the foundation day lecture of Regional Laboratory, Jorhat. In his address Dr. Ramanna said that scientific advancements greatly depended on team work and team spirit of the scientists and research workers. He traced the origin and historical background of science in the world, particularly with reference to India. The development of science was the mile-stone of advancement of human society although certain factors of religious superstition hindered on its way and to its proper perspective on basic values. He made a strong plea that the research activities in any front should not centre round for achievement of political end. In such cases it loses its very objective. He also drew attention to various drawbacks, in the matter of research works in India.

Dr. Ramanna stressed the need of creation of scientific atmosphere and was confident that research atmosphere would lead to achieve the desired objectives in offering material facilities and other scientific assistance for the benefit of common people in the society. He said that the regional research laboratory of Jorhat within the

last two years improved its capabilities in development of technology in eastern zone of the country which had abundant raw material and natural resources if properly and adequately tapped may be of great benefit to the people of the region. Prof. H.K. Baruah, Vice-Chancellor of Gauhati University, presided at the function. He also stressed the need for the proper development of science and technology and its urgent need for suitable application to the basic requirements of society.

Personal

1. Shri V. R. Mehta, Vice-Chancellor, Gujarat Agricultural University, has been elected the President of the Indian Agricultural Universities Association for the coming year.

2. Dr. A. S. Cheema, Vice-Chancellor, Punjab Agricultural University, has been appointed a member of the University Grants Commission for a term of three years.

3. Dr. K. G. Gollakota has taken over as Acting Vice-Chancellor of G. B. Pant University of Agriculture and Technology, Pantnagar.

4. Mr. B.P.R. Vithal, Secretary to Andhra Government, Finance and Planning Department, has been appointed as Vice-Chancellor Incharge during the period of absence of Shri P. Jaganmohan Reddy, Vice-Chancellor of Osmania University, w.e.f. May 9, 1977.

5. Dr. D. T. Lakdawala, Director, Department of Economics, University of Bombay, has been appointed Deputy Chairman of Planning Commission.

6. Shri A. S. Bajwa has been appointed Registrar of Himachal Pradesh University.

4. Mr. V. B. Bansal has been appointed Registrar of Bundelkhand University.

Madras institutes course in Andragogy

The Madras University will organise a Master's programme in Andragogy (adult education) from July 1977. The course which will be the first of its kind is designed to meet the increasing demand of people trained in the principles and practices of adult education. It will give an opportunity to students to understand the adult education activities based on the concepts and methods of social sciences and to gain a knowledge of practical strategies and skills which are essential for adult education programmes.

The programme would stress the applied nature of knowledge as related to adult education practice and help the student make the transfer of concepts and methods to adult education programmes. The course work

two in the first year and two in the second year. The students will be required to submit the thesis at the end of the first semester which will be evaluated by two examiners nominated by the university, one of them will be the supervisor. Each participant shall be required to select a topic for the thesis and the participant has to do it at the end of the second semester. The field work, as part of the MA course for bringing out a thesis, for a selective problem by the student, should start at the end of the second semester and individual assignment may be given to each student as segment of the field work to make an assessment of the local culture to which they have been exposed and submit the assignments for evaluation. The Department of Andragogy has built a high credibility and shall be linked with various regional, national

convened to consider matters of common interest with a view to evolving uniform approach to their problems. The Director of the Indian Institute of Technology, Madras, Vice-Chancellor of Gandhigram Rural Institute, a 'deemed university' would now onwards be regularly invited. The meeting decided to meet once in six months to discuss common campus problems. The next meeting would be held on 28th August at Coimbatore.

Amongst the various questions that were discussed, the implementation of University Grants Commission scales of pay for university teachers with retrospective effect from April 1974 figured prominently. This was necessary in view of the assurances given to the teachers by their universities. Prof. Chittibabu explained his proposal to set up local study centres within the university area as well as outside Madurai under the open university system. The principals of the Madurai University had agreed to place at the disposal of the Institute of Correspondence Course and Continuing Education all facilities available viz. libraries, laboratories and lecture rooms as well as the services of the teachers on part-time basis. The university has decided to compensate those colleges for the facilities provided to the Institute of Correspondence Course. He suggested that other universities in the State should also extend their cooperation and help in this regard. In view of the popularity of the tourism, it was suggested that the universities may introduce one-year diploma course from the next academic year. The Vice-Chancellor of the University of Madras explained the difficulties regarding conferring of the autonomous status on certain identified colleges. This had to be preceded by the adoption of certain amendments to the University Acts and he was keenly awaiting clearance from the Central Ministry for the incorporation of necessary amendments to the Madras University Act.

CAMPUS NEWS

is designed to be inter-disciplinary so that students will be oriented towards the concepts and methods of different disciplines. The unique inter-disciplinary nature of the programme will provide the students the opportunity to acquire confidence in those subject areas considered central to adult education such as psychology, sociology, anthropology, mathematics etc. Along with these students are offered two optional courses viz., management of adult education programme and instructional product development.

The postgraduate course will be open to the Bachelor degree of Madras University or an equivalent examination. Aptitude and motivation for adult education work has been prescribed as pre-requisite for admission. The course of study for the degree of Master of Arts in Andragogy shall consist of four semesters,

and international non-formal education centres. The metropolitan city and its neighbouring suburban and rural settlements provide various non-formal educational programmes. The students will be exposed to a variety of on-going programmes through field visit, teaching programmes and project work. Much emphasis is given to the practical work for which these centres will serve as field stations. Also nationally and internationally reputed adult educators will lend their expertise periodically in the form of special lectures, seminars.

VCs of Tamil Nadu meet in Madurai

The universities in Tamil Nadu held their first joint meeting in Madurai under the chairmanship of Prof. S. V. Chittibabu, Vice-Chancellor of Madurai University. The meeting was

The Vice-Chancellor suggested that in the event of the Pre-University course being shifted to the new pattern of education, a large number of college teachers are likely to be out of jobs and suggested that the Government should absorb such teachers in other departments. He also suggested that the Government should compensate the university the loss on account of examination fees under the new education pattern. It was also decided to give effect to the grading system in the university examinations from 1980-81 academic year.

ISAE convention held at Pune

The fifteenth annual convention of the Indian Society of Agricultural Engineers (ISAE) was held at the Agricultural College, Poona under the joint auspices of Mahatma Phule Krishi Vidyapeeth, Punjabrao Krishi Vishwavidyalaya, Marathawada Agricultural University and Konkarn Krishi Vishwavidyalaya. The chief guest of the occasion was Dr. V. M. Dandekar, Director of Gokhale Institute of Economics and Politics. The main theme of the convention was 'Agricultural engineering technology for small and marginal farmers'.

Dr. Dandekar appealed to the agricultural engineers that they should develop light implements which can be used with human power as most of the small and marginal farmers do not possess bullocks. In the context of small and marginal farmers the organisation would require complete reorganisation of agriculture which unfortunately had not been done during the last twenty five years. The offer of civil engineers in the construction of dams and canals was laudable but the 80% of the stored water is being used for only sugarcane production. No technical data in the utilization of water had been maintained. He therefore urged the agricultural engineers to educate the people about the need for soil and water conservation.

Prof. A. C. Pandya, President of the ISAE, in his inaugural address emphasised that the cause of poverty among the small and marginal farmers has the low resource and their inability to take advantage of the modern agricultural technology and develop subsidiary occupations to enhance their income. He said that agricultural engineers could also help small farmers by suggesting more efficient methods for water harvesting, irrigation and soil conservation for using electricity for agriculture production and processing. Shri D. A. Gadkary, Founder President of the ISAE was presented with a gold medal for his meritorious work in the field of agricultural engineering.

The convention was attended by over three hundred agricultural engineers from all over the country. Dr. A. B. Joshi Vice-Chancellor of the MPKV extended a warm welcome on behalf of the agricultural universities of the State.

Continuing education department for Patna University

There is a proposal to open a department of continuing education in collaboration with the University of Manchester at Patna. Dr. A. K. Dhan, Vice-Chancellor, informed that the preliminary discussions in this connection have been held with Prof. W.J.A. Harris of the Department of Adult and Higher Education, University of Manchester, when he visited India during March this year. The British Council has also offered assistance for the project. The Faculty of Continuing Education will provide opportunity for learning to a large number of persons who are left on their own once they leave the portals of the university. The role of such a department includes learning about the education of adults by approaching the community through both consultation and teaching, teaching adults in a limited number of areas where for the time being no other education-

nal or administrative institution is being involved and give leadership and advice in the education of adults for the many organisations and institutions already working for the continuing and non-formal education for adults. The Vice-Chancellor said that the department is fully organised. It is proposed to start few experimental seminars-conferences for professionals in training and updating (for experienced professionals) in the areas of engineering, medicine, architecture and social sciences. The various research institutes existing in Patna would be involved from the beginning in these aspects of continuing education for the highly educated people but the emphasis might be on the exchange of investigation and research findings which may have direct relevance to urgent community problems.

National workshop on micro-teaching

The University of Indore in collaboration with the National Council of Educational Research and Training, New Delhi, organised a workshop on micro-teaching. The Department of Teaching Education of the NCERT also provided the resource persons. The main purpose of the workshop was to integrate the research findings in the field experience in the area of micro-teaching.

There were about 25 participants coming from the States of Tamil Nadu, Andhra, Karnataka, Maharashtra, Gujarat, Orissa, Madhya Pradesh, Rajasthan, Harayana, Himachal Pradesh, Uttar Pradesh, Punjab, West Bengal and the Union Territories of Chandigarh and Delhi. Representatives also came from colleges of education and departments of education of different universities, national bodies like the NCERT, CASE and the GCPI.

The participants showed their keenness for improving student teaching by introducing micro-teaching as a regular part of the teacher education programme. The meet was highly successful in

the improvement of student teaching and other programmes of teacher education.

Dr. Dhan heads UGC panel

Dr. A. K. Dhan, Vice-Chancellor, Patna University, has been appointed Chairman of the committee constituted by the University Grants Commission to advise on the concept and modalities of implementation of remedial courses to be provided in universities and colleges. The objective of the committee is to study in depth the question of organising courses for students who due to certain reasons were unable to complete the required course contents for various examinations. This will go a long way in meeting the problem of growing numbers of drop-outs at different stages of education. This programme is of special significance for the weaker sections of the population who are unable to appear at examinations due to non-completion of courses or on account of poor financial conditions.

CSIR complex to be surveyed

The University of Madras will appoint a commission to visit the CSIR complex for recognition of all the seven extension centres located in the complex for Ph D work. Dr. Malcolm S. Adiseshiah said that scientists should evolve an integrated form of rural development. He commended the efforts of the CSIR in adopting Karimnagar district in Andhra Pradesh and bringing science and technology to the community at large to improve the conditions of rural life. He congratulated Dr. Y. Nayudamma, Director-General of CSIR and his colleagues on the efforts in this direction of taking up the problems of rural development in the present set up and appealed to the scientists to take up the present duties. He appreciated the activities of the CSIR and in particular the Central Electrochemical Research Institute to the cause of industrial development.

Recent changes in GAU

The Gujarat Agricultural University has decided to organise department of forestry and fishery in the university from the coming academic session. The university has also approved a scheme for the award of GAU fellowship for postgraduate studies in the various faculties of the university. A five-day workshop on teaching methods and evaluation at the Anand campus of the university was organised for evolving guidelines on teaching and evaluation methods for the benefit of young and new teachers of the university. The code of conduct proposed by the university teachers and adopted by the Academic Council was approved by the Board of Management and has been implemented.

Various new courses in Panjab

The Academic Council of Panjab University which met in Chandigarh recently approved the scheme to introduce MA course in Education from the next year as a purely academic discipline. Both science and arts graduates with at least a second class degree would be eligible for admission to this general course. Preference will be given to those having Education as an elective subject at the graduate level. It was also decided in principle to start a Master's course in Indian theatre. So far the university has been running only one-year diploma course in the subject.

MA and MPhil courses in Music will be started on the campus with Hindi, Punjabi and English as the medium. MPhil course in Sociology will also be introduced in the ensuing session. Besides, a two-year full time postgraduate course in personnel management and industrial relations will be introduced in the Department of Commerce and Business Management. This new vocational course will aim at meeting the increasing need of the industrial society for managerial talents and at making education more and more job-oriented.

Garhwal develops centre of Himalayan studies

The Institute of Himalayan Studies and Regional Development of Garhwal University has framed details of MPhil course in regional development and postgraduate diploma courses in Environmentology and Tourism. The centre will also provide consultancy in Tourism and Tourism Geography. Dr. Tej Vir Singh of Lucknow University is likely to join the institute as its full-time Director. He has made notable contributions in the field of tourism and had set up a non-profit tourism research centre in Lucknow. He also edits a journal of Tourism and Research besides extending consultancy in tourism to various universities and tourism directorates of State Governments.

Efforts to make PU central university

A delegation of Patna University Teacher's Association met the Union Education Minister, Dr. P. C. Chunder, in Delhi and submitted a memorandum demanding conversion of Patna University into a central university and improvements in the conditions of the university. Prof. P. N. Sharma, President of the Association, after the meeting said that the Central Government would consider the demands sympathetically. Dr. A. K. Dhan, Vice-Chancellor of the University, has also met the Education Minister and requested him to convert Patna University into a central university. Meanwhile the University Student's Union has decided to name the union building as 'Jayaprakash Bhavan' in honour of Shri Jayaprakash Narayan, an ex-student of the university. There is also a proposal to rename the university after him.

New Sports complex at NSCI

A mini sports complex has been recently provided by the

National Sports Club of India for the benefit of its members. The complex will provide added facilities for swimming, table tennis, badminton, billiards and squash. A health club is also proposed to be started on this complex. The key part of the complex will be swimming pool which is divided into a shallow end to give training to learners and the end for organising competitions. There is also a puddle pool for tiny tots. While the use of the pools and other courts will be primarily for the members of the NSCI, outsiders like school children and university and college students will also be admitted. The total cost of construction is likely to cross Rs. twenty lakhs.

NFE project at Surat

The Department of Education, South Gujarat University, Surat, is preparing an international directory of literature on non-formal education. The directory would be useful to workers in the field of social and economic development, planning and non-formal education. As a first step literature is sought to be compiled at one place in order to list all references at one place. Dr. Motilal Sharma, Reader in Education would be glad to get the necessary information from workers in this area.

University courses in Stage and Acting

The Calicut University has decided to institute courses in Stage and Acting. Mr. G. Shankara Pillai, the well known experimental dramatist, will be the head of the faculty. These efforts will help in the proper development of Malayalam stage on modern lines.

Southeast Asian regional conference in Physics held at Penang

The University of Science of Malaysia organised southeast asian regional conference on university Physics Education from 16th to 21st May 1977 at Penang. Prof. B. Ramachandra Rao, Vice-Chairman, University Grants

Commission led a delegation consisting of Prof. S. N. Sen (North Bengal University), Prof. L. S. Kothari (Delhi University), Prof. C. Mande (Nagpur University), Prof. B. Sanjeevaiah (Mysore University) and Prof. M. P. Gupta (Ranchi University). The conference brought together the Asian scientists and went a long way in breaking the isolation and frustration that faced them. The conference aimed at identifying, analysing and comparing Physics curricula and approaches to Physics Education in universities in Southeast Asia; discussed the ideas and recommendations of the 1975 International Conference on Physics Education held at Edinburgh; prepared guidelines for the development and improvement of Physics Education necessary for the further growth of regional institutions and organisations. The focus of discussion at the conference was on current Physics courses and curricula in Southeast Asian universities, design development and evaluation of new Physics courses and curricula; new approaches to teaching and learning of Physics; role of teaching laboratory in Physics education; postgraduate education of physicists and physics and Society in Southeast Asia. Prof. Chatar Singh of School of Physics, University of Science of Malaysia was the chief coordinator of the meet.

Modernisation of Sanskrit studies

Dr. R. S. Krishnan, Vice-Chancellor of Kerala University while inaugurating the Tamil Nadu Sanskrit conference in Tiruchi suggested the opening of a higher institute for Sanskrit in each State with facilities for teaching the language both in the modern and the traditional way. Such an institute should provide research facilities for scholars to obtain degrees like M.Litt. and Ph.D. in Sanskrit.

Referring to the popularisation of Sanskrit, Prof. Krishnan said that universities and institutions could provide correspondence courses in Sanskrit to cater to the needs of large number of

employed people who were keen on learning of the language. He did favour the idea to make the study of Sanskrit compulsory in schools and colleges as the academic compulsion on this score might not provide the desirable result. On the contrary it may prove harmful to the cause of Sanskrit.

Mr. T. V. Viswanatha Aiyar, convener of the conference, put forward a fourteen point plan for the consideration of the conference. The plan was intended to popularise and preserve Sanskrit and enrich Indian culture and heritage embedded in the language. He made an appeal to the Central Government to constitute a committee for each State to oversee the objects and purposes for which the Government's Sanskrit grants were made. He also suggested the institution of postal and radio courses for popularising a uniform style of teaching Sanskrit. He appreciated the services of the All-India Radio to revive interest in that language. He proposed the setting up of an agency to prepare original books in Sanskrit in the modern language and emphasised the need for bringing out a newsletter in Sanskrit weekly or daily. Expressing its deep concern over the waste and diversion of funds of Hindu trusts and surplus revenues of temples earmarked for the study of Vedas and Sastras, the conference pleaded with the Government that on no account should such diversions be permitted and the funds used for purposes other than Sanskrit learning and Sanskrit studies be made a first charge on the funds. The universities interested in the promotion of Sanskrit could organise a correspondence course. The conference also suggested a one-year course of extension lectures on subjects of current interests for the benefit of pandits trained on traditional lines. The conference also pleaded for greater importance to Sanskrit in the all-India competitive examinations and the constitution of a semi-official committee at the Central as well as in the States.

Secretary General for ICSW

The International Council of Social Welfare is voluntary organisation promoting social welfare programmes internationally and in specific regions through such functions as the organisation of a world-wide biennial conference of social welfare issues, the organisation of regional seminars, meetings and symposia, the development of policy statements relating to the social welfare field, publication of a journal and other social welfare literature of international interest. The Council operates national committees in over seventy countries and more than twenty international member organisations. Its Governing Body is composed of representatives of each national committee and representatives of the international member organisations. The Secretary-General is the chief executive officer of the Council, appoints all administrative and professional personnel, supervises the administrative operation of the headquarters and regional offices, recommends policies to the Executive Committee, supervises the organisation and operation of the world-wide conference and forums held by the Council every two years, prepares and recommends a financial budget to the Council's Finance Committee, assists in raising funds for the operation of the Council and for special projects, prepares position papers for consideration of the Executive Committee and the Committee of Representatives on the important issues involving basic policies and relations with the United Nations and other international agencies and performs such other tasks as may be assigned and as are customary duties for a chief executive of an international organisation such as the ICSW.

The Council has its headquarters in New York. The office of the Secretary-General would fall vacant in 1978. Those who are interested may send

their particulars by 15th June, 1977 to Mr. Reuben C.B. Baetz, Chairman, International Search Committee, 55 Parkdale Avenue, Ottawa, Ontario, Canada K1Y 1E5.

JNU likely to have separate basic sciences departments

A separate school of physical sciences is to be developed in the Jawaharlal Nehru University, New Delhi. The proposal to provide a separate base for physicists and chemists has been discussed at various levels for quite some time. In the changing pattern greater emphasis is being laid on the development of basic sciences. The Indian Institutes of Technology have separate basic science departments which interact on common problems with other departments. It is now felt that the strong basic science departments in the university would be in a better position to feed inter-disciplinary studies. This would however require some adjustments. The school of theoretical and environmental sciences which started functioning last year has already undergone a change and is now known as school of environmental sciences. It will continue to include disciplines like geology and oceanography even after the establishment of the new departments. There is a proposal to have a separate school for the physical sciences. The report of the University Grants Commission is keenly awaited when the further course of action would be finally decided.

Plea for Secondary Education Grants Commission

All-India Secondary Teachers Federation has urged the Union Education Ministry to initiate steps for the setting up of a Secondary Grants Commission on the lines of the University Grants Commission. A delegation of the organisation met the Education Minister and presented

a memorandum of their demands. The memorandum called for a uniform national pay structure for teachers and non-teaching staff of secondary schools throughout the country.

PU new condition for affiliation

In future only those colleges who pay new UGC scale to their teachers will be allowed affiliation with Panjab University. The managements will be required to fulfil this condition in addition to those already laid down for grant of affiliation to the university.

The university also decided to institute Justice Mehar Chand Mahajan Memorial Lectures in the Department of Law. Justice Mahajan had been the Dean of the Faculty of Law for a number of years and had been its senator and syndic for a long period.

New courses at South Campus

The South Delhi campus of the University of Delhi would soon start postgraduate courses in Commerce, Political Science, Sanskrit, Mathematics, History, Philosophy, Physics, Economics. The university has been asked to send revised proposals to the University Grants Commission for the construction of buildings, purchase of books, equipment as a sum of Rs. one crore might be available for the development of the campus during the current plan period.

Swaminathan elected to US Academy

Dr. M. S. Swaminathan, Director-General of Indian Council of Agricultural Research, has been elected Foreign Associate of National Academy of Sciences of the USA. He is the third Indian scientist and the first agricultural scientist to be so honoured. The other two are Dr. V. Ramalingaswami, Director of the All-India Institute of Medical Sciences, New Delhi and Dr. D. Lal, Director of the Physical Research Laboratory, Ahmedabad.

GURU NANAK DEV UNIVERSITY AMRITSAR

Advertisement No. 12/77

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University, Amritsar by making a written request accompanied by self-addressed stamped envelope of 23 x 10 cms. so as to reach this office by 25-6-1977 alongwith crossed Indian Postal Order(s) for Rs. 7.50 for posts at Sr. No. 1 & 2 and Rs. 5/- for posts at Sr. No. 3 to 5 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

Note: Persons already in employment must send their applications through their employers.

Grade (plus allowances as admissible under University rules)

1. Lecturers (temporary) for Job-Oriented Courses in Department of Chemistry (Rs. 700-40-1100-50-1600).

(i) Instrumentation (ii) Oils, Soaps and Detergents. (iii) Dyes and Dyeing Technology (iv) Paints and Varnishes (v) Heat Treatment (vi) Electroplating.

2. Curator in Biology (Rs. 400-40-800-50-950)

3. Research Assistant in (i) Political Science and (ii) for Oral History Cell (Rs. 300-25-350/25-400-30-610/30-640-40-800)

4. Research Fellows in Economics (2) and Mathematics (1) (Rs. 400/-p.m. fixed).

5. Junior Research Fellows (U. G. C.) in Economics (1) and English (1) (Rs. Rs. 400/-p.m. fixed)

QUALIFICATIONS:

Lecturers for Job-Oriented Courses (Sr. No. 1): Essential (i) A Doctor's degree or published work of an equally high standard (ii) Consistently good academic record with First or High Second Class (b+) Master's degree in the relevant subject or an equivalent degree of a foreign University. **Additional For posts at Sr. No. 1 (ii) to (vi):** Teaching/Research/Factory Experience.

SPECIALIZATION:

Post 1 (i) Electro Analytical or Spectroscopic Methods of Analysis.

Post 1 (ii) M.Sc. (Technology) in Oils Soaps.

Post 1 (iii) M.Sc. (Textile Chemistry)

Post 1 (iv) M.Sc. (Technology) in Paints & Varnishes.

Posts 1 (v) & (vi) M.Sc. Engineering (Mechanical).

Curator in Biology (Sr. No. 2):

(i) A good academic record with First or High Second Class Master's degree in Botany/Zoology. (ii) A mini-

mum of two years' research experience in Taxonomy.

Research Assistant in Political Science (Sr. No. 3(i): Essential

(i) Good academic record with (b+) Master's degree in Political Science. (ii) Evidence of research work done/apptitude for research. **Desirable:** Ph.D. or M. Phil. degree.

Research Assistant for Oral History Cell (Sr. No. 3 (ii): Essential

(i) Second Class Master's degree in a Social Science or a language. (ii) Knowledge of Punjabi and History upto atleast B.A. level. (iii) Experience of research and field work. **Desirable:** (i) Multilinguistic equipment. (ii) Skill in photography.

NOTE: The Research Assistant will be required to work in the field primarily to collect oral evidence and historical records in Persian, Punjabi and other Indian Languages.

Posts at Sr. No. 4 and 5:

(i) First or High Second Class Master's degree in the subject concerned with good academic record. (ii) Aptitude for research.

BHARPUR SINGH
REGISTRAR

ROHTAK UNIVERSITY ROHTAK

Advertisement No. 11/77

Applications are invited on plain paper (through proper channel in the case of those already in employment) for the following posts, giving complete bio-data i.e. name, date and place of birth, nationality permanent and correspondence addresses, academic and professional attainments from Matriculation onwards, *indicating clearly percentage of marks obtained in each exams. upto the master's degree level alongwith attested copies of certificate/testimonials, list of publications and Research Project(s) undertaken, languages known, details of visits to foreign countries, if any, names and addresses of atleast two persons well acquainted with the academic and professional work*, so as to reach the Registrar, Rohtak University, Rohtak on or before 6.6.1977. The applications should be accompanied with Indian Postal Order(s) for Rs. 7.50 for posts at Sr. No. 1 to 9 and Rs. 5.00 for the post of Sr. No. 10 and 11 drawn in favour of the Comptroller, Rohtak University, Rohtak payable at Rohtak Post Office. Ex-servicemen scheduled Caste/Tribes and Backward Classes candidates are exempted from application fee. The Items given above in Italics are applicable to teaching posts only. Attested copies of Certificates/testimonials required in other cases also.

1. Readers in English :2 Grade Rs. 1200-50-1300-60-1900.

2. Lecturers in English :2 (for the University Evening College, Rohtak)

3. Lecturers in Mathematics : 2 (including one for the University Evening College, Rohtak).

Grade: Rs. 700-40-1100-50-1600.

4 Lecturers in Commerce 2 (for University Evening College, Rohtak).

5. Lecturers in Chemistry: 2 (Physical and Inorganic Chemistry).

6. Lecturers in Hindi : 2 (for University Evening College, Rohtak)

7. Research Assistant :1 Grade: Rs. 300-25-600. (Unrevised).

8. Type/Shorthand Instructor: 1 (for University Evening College, Rohtak). Grade Rs. 250-15-400.

9. Lady Hostel Supervisor: 1 Grade Rs. 250-12½/-425.

10. Senior Scale Setnographers. Grade Rs. 225-15-360/20-500.

11. Steno-typists. Grade Rs. 110-4-130/5-160-5-225 plus Rs. 25/ special pay.

The posts carry usual allowances as admissible under the University Rules in force from time to time. Higher start possible in deserving cases.

QUALIFICATIONS:

1. For Readers & Lecturers:

(i) Consistently good academic record with 1st or 2nd class Master's Degree (with atleast 55% marks) in the relevant subject or an equivalent degree of a foreign University: and

(ii) Either a Doctorate degree or an equivalent research degree or published work or an equally high standard.

2. For Research Assistants:

(i) Essential: (a) M.A./M.Sc. in Mathematics.

(b) Typing speed of 30 w.p.m.

(ii) Desirable: (a) Experience of working in a similar capacity in a University/Research Institution.

- (b) Knowledge of French/German/Russian.
- (c) Knowledge of Shorthand.

3. For Shorthand/Type Instructor:

Bachelor's Degree with a Diploma from a recognised Industrial Training Institute. Experienced hands will be preferred.

4. For Lady Hostel Supervisor:

A Bachelor Degree in Arts/Science/Commerce with B.T./B.Ed. Preference will be given to those who have supervised the working of a Girl's Hostel in a University or a College of repute.

5. For Senior Scale Stenographers:

Bachelor's Degree with 100 w.p.m. speed in English Shorthand and to transcribe them on the typewriter at a speed of 20 w.p.m.

6. For Steno-typists:

2nd class in Matriculation/Hr. Secondary/Pre-University examination with 80 w.p.m. speed in English Shorthand and 30 w.p.m. speed in type-writing.

SPECIALIZATIONS:

1. For Readers (English)

- (i) American Literature OR Modern English Literature.
- (ii) Modern English Literature Or English Literature 1660-1798.

2. For Lecturer in Mathematics:

Pure Mathematics.

3. For Lecturer in Commerce:

- (i) Industrial and Commercial Law.
- (ii) Financial Rules and Management:

4. (i) For Lecturer in Physical Chemistry:

Equilibrium or non-equilibrium thermodynamics, polymer Chemistry, solid state chemistry, spectroscopy, quantum chemistry, modern electro-chemistry.

(ii) For Lecturer in Inorganic Chemistry.

Analytical techniques in inorganic chemistry, coordination chemistry, tracer techniques, spectroscopic techniques (notably infrared and Raman) to the elucidation of bonding and structural features of inorganic and organometallic compounds.

EXPERIENCE:

FOR READERS:

At least five years teaching experience in Honours/Post-graduate classes OR Post-doctoral Research in a University or a College.

FOR LECTURERS:

Two years' teaching experience or Post-doctoral Research.

Qualifications and experience are relaxable in the case of exceptionally qualified persons.

REGISTRAR

LUCKNOW UNIVERSITY Advertisement No. 9/1977

Applications are invited for the following posts:—

1. One Professor of Psychology in the grade of Rs. 1500-60-1800-100-2000-125/2-2500.

QUALIFICATIONS:

Essential:-(a) A doctorate in the subject of study concerned or a published work of a high standard in that subject; and

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks) Master's degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work, is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

2. Experience of teaching post-graduate classes for not less than seven years and/or having conducted and successfully guided research work for seven years in a recognised Institution and having published work of high standard in the subject concerned.

Preferential-High academic distinctions.

Readers in the grade of Rs. 1200-50-1300-60-1900:

2. One Reader in Hindi
3. One Reader in Physics
3. One Reader in Mathematics
5. One temporary Reader in Botany
6. One temporary Reader in Botany (Plant Nutrition)
7. One temporary Reader in Geology

QUALIFICATION:

Essential-1 (a) A doctorate in the subject of study concerned or a published work of a high standard in that subject; and

(b) Consistently good academic record (that is to say the overall record of all assessments throughout the academic career of a candidate) with first or high second class (that is to say, with an aggregate of more than 54% marks) Master's Degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

2. Experience of teaching honours/Post-graduate classes for not less than five years and published research work of high standard in the subject.

Preferential--Experience of teaching Post-graduate classes and guiding research.

Lecturers in the grade of Rs. 700-40-1100-50-1600:

8. One Lecturer in Tibetan
9. One Lecturer in Urdu
10. One temporary Lecturer in Sociology
11. One temporary Lecturer in Botany

QUALIFICATIONS:

Essential-(a) A doctorate in the subject of study concerned or a published work of a very high standard in that subject; and

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks) Master's degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) supra.

Preferential:-Experience of teaching degree/honours/post-graduate classes for two years.

GENERAL:

For purposes of qualifications required for the above posts, the Degree obtained in a subject taught in a Department which is subsequently constituted into separate Departments, shall be deemed to be degree in the subject concerned for the newly constituted Departments.

Benefits of Provident Fund available as admissible under the rules on confirmation for permanent posts. Period of probation for permanent posts is one year. It is not necessary to fill any/all of the advertised posts.

For the posts of Lecturers, other things being equal preference will be given to Schedule Castes/Tribes candidates, who are considered fit. Such candidates should indicate in their applications that they belong to Scheduled Castes/Tribes, attaching certificate from the District Magistrate of the District to which they belong. No other certificate for this purpose will be entertained. In case of Scheduled Caste/Scheduled Tribe candidates interviewed by the Selection Committee, if suitable candidates are not available for appointment to the posts of Lecturers, the Selection Committee may recommend appointment of suitable candidate as Research Associate in the scale of Rs. 700-1300 for a period upto three years and these persons could later compete for the posts of Lecturers as and when vacancies occur.

Applications on the prescribed form (available on request, accompanied with

a self-addressed envelope of size 23 cm x 10 cm., free of cost, from the Office of the Registrar) with recent testimonials, publications etc. should reach the Registrar, Lucknow University by Monday, June 27, 1977. The candidates who are in service must send their applications through proper channel. Applications Forms to outstation candidates will be issued by post upto Monday, June 20, 1977.

Sd/-
(B. N. Singh)
REGISTRAR

BANARAS HINDU UNIVERSITY
(Advertisement No. 5/1977-78)

Applications are invited for the undermentioned posts. The benefit of Provident Fund/Pension, Dearness Allowance, House Rent Allowance and City Compensatory Allowance are admissible according to University Rules. The retirement age of University employees is 60 years. The appointment will be made on two years probation on all permanent posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Orders for Rs. 7.50 in favour of the Registrar, Banaras Hindu University towards the application fee. Application forms alongwith the leaflet of information will be supplied free of cost by the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 on receipt of Rs. 0.40 paise stamped self addressed envelope of 23 cm x 10 cm size. Candidates called for interview for these posts will be paid actual Railway fare by the Second class plus reservation charges for sleeper, if paid, and/or actual Bus fare from the present residence bothways by the shortest route as per University Rules. No other expenses will be paid.

Application for each post be sent separately alongwith attested copies of certificates in support of the qualifications and experience mentioned in the application and be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005.

For the posts of Lecturers, other things being equal preference will be given to scheduled castes/scheduled tribes candidates who are considered fit.

Incomplete application in any respect will not be entertained for consideration.

Those who are in service should apply through proper channel. M. O. or cheque will not be accepted towards the application fee.

The declaration columns 2 (A) and (B) relating to association with the then banned organisations have been deleted from the revised application forms for all posts.

THE LAST DATE FOR RECEIPT OF APPLICATIONS IS 24TH JUNE, 1977.

NOTE: Those who have applied earlier in response to our previous advertisements for these posts, need not apply again.

INSTITUTE OF MEDICAL SCIENCES

1. READER IN OBST. & GYNAECOLOGY (Two)

Grade Rs. 1200-50-1300-60-1900 plus N.P.A. as per rules

Qualifications Essential: (1) M.B.B.S. or equivalent qualification recognised by the Medical Council of India. (2) M. D. (Obst. & Gyn.), M.S. (Obst. & Gynaec.), M. O. M.R.C.O.G., Speciality Board of Obst. & Gynaecology (U.S.A.). (3) Teaching experience as Asstt. Professor/Lecturer in Obst. & Gynaecology for 3 years in a Medical College.

2. READER IN SKIN & V. D: (One)

Grade: Rs. 1200-50 1300-60-1900 + N.P.A. as per rules

Qualifications Essential: (1) M.B.B.S. Degree or equivalent qualification recognised by the Medical Council of India. (2) M.D. (Dermatology & Venereology) M.R.C.P. (with Dermatology as special subject); or M.R.C.P. with D.V.D. or M.D. (General Medicine) with D.V.D. (3) Three years teaching experience as Asstt. Professor/Lecturer in the subject in a Medical College. **Desirable:** (1) Research publications in standard journals

3. READER IN TUBERCULOSIS & CHEST DISEASES (One)

Grade: Rs. 1200-50-1300-60-1900 + N. P. A. as per rules

Qualifications Essential: (1) M.B.B.S. Degree or equivalent qualification recognised by the Medical Council of India. (2) M.D. (Tuberculosis), M.D./M.R.C.P. in Medicine with T.D.D., D.T.C. or D.T.C.D., (3) Three years teaching experience as Asstt. Professor/Lecturer in Tuberculosis in a Medical College. **Desirable:** (1) Research publications in standard journals.

4. READER IN CLINICAL PSYCHOLOGY (One)

Grade: Rs. 1200-50-1300-60-1900

Qualifications Essential: (1) A first or second class Master's Degree in Psychology with specialisation in Clinical Psychology and a Diploma in Medical and Social Psychology (D.M.S.P.). (2) Ph.D. Degree in Clinical or Abnormal Psychology and/or published work of a high merit in reputed journals. (3) About five years teaching experience in any recognised Institution or five years research experience in any mental Hospital/psychiatric Clinic/Child Guidance Clinic.

5. LECTURER IN MICROBIOLOGY (One)

Grade: Rs. 700-40-1100-50-1600 (plus N.P.A. admissible only to Medical Graduates)

Qualifications Essential: (1) M.B.B.S. or equivalent qualification recognised by

the Medical Council of India. (2) M.D. M.Sc./D.Phil./D.Sc. in Microbiology. (3) The requisite recognised P. G. qualification in the subject and 3 years teaching experience as Tutor/Demonstrator in Microbiology of which one year should be after Post-graduate qualification.

OR: FOR NON-MEDICAL: (1) First class M.Sc. in Microbiology Ph.D. or D.Sc. in Medical Microbiology. (2) About 3 years teaching experience in medical microbiology in a recognised medical Institute (after requisite Post-graduate qualification). **Desirable:** (1) Publications in Medical Microbiology.

6. LECTURER IN PATHOLOGY (Two)

Grade: Rs. 700-40-1100-50-1600 + N.P.A. admissible as per rules.

Qualifications Essential: (1) M.B.B.S. Degree or equivalent qualification recognised by the Medical Council of India. (2) Post-graduate Degree in Pathology, M.D., Ph.D., D.Sc., M.Sc., Speciality Board of Pathology U.S.A. OR M.D., (Medicine)/M.R.C.P./F.R.C.P. with D.E./D.C.P./D.Path., M.R.C.P. (with Pathology as special subject) or an equivalent qualification. (3) About two years teaching experience as Demonstrator or equivalent post in Pathology in a recognised Medical Institute or Hospital. **Desirable:** (1) Research Publications in the subject. (2) Experience in Histopathology work.

7. LECTURER IN MEDICINAL CHEMISTRY (One)

Grade: Rs. 700-40-1100-50-1600.

Qualifications Essential: (1) Consistently good academic record with first or high second class (B+) M.Sc. Degree in Chemistry or M.Pharm. Degree with specialisation in Pharmaceutical Chemistry or an equivalent degree of a foreign University. (2) Three years research or teaching experience in the subject in a recognised Medical College. **Desirable:** (1) A Doctor's Degree or published work of an equally high standard. (2) Experience of standardisation of drugs. (3) Research experience in Chemistry of medicinal plants, as evidenced by published work in standard scientific journals.

NAGPUR UNIVERSITY

Employment Notice

Combined Advertisement E & F
See detailed note below

Applications are invited for the following posts in the University Department so as to reach the undersigned on or before Friday, the 24th June, 1977.

I. Professor (1) Law and (2) Biochemistry (One each).

II. Reader: (1) Law (3 posts), (2) Microbiology, (3) Cellulose Technology, (4) Geology (Exploration Geo-chemistry), (5) Chemistry (Nuclear Chemistry), (6) Petro-Chemical Technology, (7) Organic Technology, (8) Ancient Indian History, Culture and Archaeology, (9) Marathi, (10) Business Management and (11) Home Science (One each).

III. Lecturer: (1) Law (2 posts-1 post for Post-graduate Deptt. of Law and 1 post for Law College), (2) Microbiology (2 posts), (3) Cellulose Technology, (4) Geology (Exploration Geochemistry), (5) Chemistry (Analytical Chemistry), (6) Mathematics, (7) History, (8) Zoology (Entomology) (One each), (9) Education (2 posts)—Post-graduate Deptt. of Education), (10) Home Science (Economics) and (11) Petro-Chemical Technology (One each).

Scale of Pay:

- (I) Professor: 1100-50-1300-0-1600
(II) Reader: Rs. 700-50-1250
(III) Lecturer: Rs. 400-40-800-50-950.

(Note—The above scales are likely to be revised as per U.G.C. recommendation).

Qualifications:

(i) Professor: (i) A Scholar of eminence with a Doctorate Degree of recognised University in the subject concerned with research publications of merit;

(ii) Consistently good academic record with First or High Second Class (B+) Master's Degree in the relevant subject of a recognised University or equivalent degree of a Statutory Institute;

(iii) Ten years' teaching experience out of which minimum of 5 years should be of Post-graduate teaching and research/professional experience in the subject concerned;

(iv) Proved experience of guiding doctoral level research.

(Note:—For the post of Professor in Law, the candidate must have Doctorate Degree of a recognised University in the subject concerned or published research work of an equally high standard. Other qualifications will be the same as above).

II Reader (Except for the post of Reader in Cellulose Technology).

(i) Doctorate Degree of a recognised University in the subject concerned;

(ii) Consistently good academic record with First or High second Class (B+) Master's Degree in the relevant subject of a recognised University or equivalent degree of a statutory Institute;

(iii) (a) Not less than 5 years' experience of the teaching upto Degree classes. (b) Post-graduate teaching experience shall be given preference.

(iv) Capacity to guide doctoral level research.

(Note:—(1) For the post of Reader in Cellulose Technology;

(i) the candidate must have First Class Bachelor's degree in Chemical Engineering or Chemical Technology (in Cellulose Technology) or Textile Technology or M.Sc. at least Higher Second Class in Organic Chemistry;

(ii) Ph.D. in any of the above Branches with or without Master's Degree in Chemical Engineering or Chemical Technology;

(iii) At least one year experience in Cellulose Industries or Cellulose based industries.

(2) For the post of Reader in Business Management:

(i) Consistently good academic record with First or High Second Class (B+) Master's Degree in Business Administration/Economics/Commerce of a recognised University or equivalent degree of a statutory Institute. Other qualifications will be the same as above).

(III) Lecturer:

(i) Doctorate Degree of a recognised University in the subject concerned or published research work of an equally high standard;

(ii) Consistently good academic record with first or high second Class (B+) Master's Degree in the relevant subject of a recognised University or equivalent degree of a recognised University or Statutory Institute.

(iii) Persons having teaching experience at least upto degree classes will be preferred.

Note:—(1) For the posts of Lecturer in Law:

(i) The candidate must have Degree of LL.M. in first or high second class;

(ii) Teaching experience of 5 years in Law College;

(2) For the post of Lecturer in Cellulose Technology;

(i) the candidate must have 1st Class Bachelor's Degree in Chemical Engineering or Chemical Technology or Textile or M.Sc. at least Higher Second Class in Organic Chemistry;

(ii) Post-graduate Degree in Chemical Engineering or Chemical Technology or Textile Technology or Ph.D. in Organic Chemistry.

(3) For the post of Lecturer in Home Science, candidate must be post-graduate in Economics and degree in Home-Science will be an additional qualification.

(A) For the post of Professor and Reader, the Selection Committee may relax the above qualifications in case of otherwise exceptionally qualified candidate, only if the candidates with aforesaid qualifications are not available and if not considered suitable.

(B) For the post of Lecturer, the Selection Committee may relax the above qualifications in case of otherwise exceptionally qualified candidates, only if the candidates with aforesaid qualifications are not available and if not considered suitable. Provided that candidate if selected for the post of Lecturer, will have to acquire the prescribed qualifications within five years from the date of their appointment.

At first instance all the above posts as per advertisement 'E' will be treated as reserved for backward communities, SC/SI/VJ/NT/OBC and if suitable candidates are not found from the Backward Communities candidates as per advertisement 'F' will be considered on general merit.

Separate applications are necessary for both 'E' and 'F' advertisements, as advertisement 'E' is exclusively for Backward Communities.

Eight copies of prescribed application forms with particulars of details of qualifications, specialisations, etc. will be supplied on payment of non-refundable fee of Rs 5/- by Crossed Indian Postal Order payable to the undersigned alongwith self-addressed envelope bearing postal stamps worth 00.70 paise.

Last date for supply of blank forms—

15th June, 1977 (Wednesday).

Nagpur
25th May, 1977

B. Y. Aher
Registrar

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 4/77-78

Applications, on the prescribed form, are invited for the following posts:

Candidates must possess Medical Qualifications included in 1st or 2nd Schedule or Part II of the 3rd Schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of educational qualifications included in Part II of 3rd Schedule should fulfil the conditions stipulated in Section 13 (3) of the Indian Medical Council Act, 1956. Must possess a basic University or equivalent qualification entered in Schedules under State/Central Medical Registration Act (For the posts at Sl. Nos. 1 & 2 only).

1. Reader in Pathology, J. N. Medical College. Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications:

M.D. (Pathology), M.D. (Pathology/Bacteriology), M.D. (Pathology with Bacteriology), M.Sc. (Medical Pathology), Ph.D. (Pathology) D. Sc., (Pathology), Speciality Board of Pathology (USA). M.R.C. Path. (London) after examination M.C.P. (Australia) after examination.

As Assistant Professor/Lecturer in Pathology for three years in a Medical College. (Experience in Advance Haematology & Immuno-Haematology).

2. Lecturers in Microbiology (2 posts).

Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications:

M.D. (Bacteriology)/M. D. (Microbiology)/M. D. (Bacteriology with pathology)/M. D. (Pathology & Bacteriology)/M.Sc. (Bacteriology/M.Sc. (Microbiology)/Ph.D. (Bacteriology/Ph.D. (Microbiology)/ D.Sc. (Bacteriology)/D.Sc. (Microbiology).

The requisite postgraduate qualifications in the subject and three years teaching experience as Tutor/Demonstrator in Bacteriology/Clinical Pathologist/Resident Pathologist of which one year should be after postgraduate qualification.

Desirable:

Experience as a Lecturer.

3. Reader in Moalijat-e-Tib, A. K. Tibbiya College. Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualification:

(i) B.U.T.S., B.U.M.S., B.U.M.M.S., D.U.M., M.D. (Unani) or equivalent

degree or Diploma; (ii) Five years teaching experience in the speciality concerned; (iii) Knowledge of Arabic & English.

Desirable:

- (i) Published work in Moalijate-Tib;
- (ii) Practice in Unani Medicine; and
- (iii) Research Work.

4. Professor of Statistics (Information Theory)-Plan Post Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances

Qualifications:

(a) A first or a high second class Master's Degree in Statistics of an Indian University or equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least ten years experience of teaching Postgraduate classes and guiding research.

5. Professor of History. Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances. (Temporary but likely to become permanent).

Qualifications:

(a) A first or a high second class Master's Degree in History of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least ten years experience of teaching Postgraduate classes and guiding research.

6. Reader in Central Asian History. Scale Rs. 1200-50-1300-60-1900 plus allowances. (Plan Post).

Qualifications:

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or equivalent foreign qualifications; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching postgraduate classes and some experience of guiding research.

Desirable:

Knowledge of Persian/Russian.

7. Reader in Linguistics (Psycholinguistics)-Plan Post. Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications:

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualifications; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching Postgraduate classes and some experience of guiding research.

8. Reader in Law (Mercantile Law)-Plan Post. Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications:

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching Postgraduate classes and some experience of guiding research.

9. Reader in Philosophy (temporary but likely to become permanent). Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications:

(a) A first or a high second class Master's Degree in Philosophy of an Indian University or an equivalent foreign qualifications; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching Postgraduate classes and some experience of guiding research.

Desirable:

History of Philosophy/Comparative Philosophy.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is 10th June, 1977. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

**Jamalur Rahman
Registrar**

**GAUHATI UNIVERSITY
GAUHATI-14**

Advertisement No. 4 of 1977

Applications are invited for the following posts:

1. Professor of Library Science: One post (permanent).
2. Professor of Law: One post (permanent).

3. Professor of Business Administration: Two posts (5th Plan).

4. Reader in Business Administration: Three posts (5th Plan).

5. Reader in English: One post (5th Plan). Spl: Method of English teaching.

6. Reader in History: One post (permanent). Spl:—Ancient Mediaeval History of Assam. Preference will be given to one having experience of teaching and guiding research in History of Ancient Assam.

7. Reader in History One post (5th Plan). Spl:—Economic History of India.

8. Reader in Zoology: One post (5th Plan). Spl:—Ecology.

9. Reader in Library Science: One post (permanent).

10. Reader in Commerce: One post (permanent).

11. Lecturer in English: One post (permanent).

12. Lecturer in History: One post (permanent). Spl: Mediaeval History of India.

13. Lecturer in Physics: Two posts (temporary). Spl.: Electronics.

14. Lecturer in Zoology: Two posts (one permanent & the other temporary). Spl: For permanent post special training in Animal Genetics and for temporary post Cell Biology.

15. Lecturer in Library Science: One post (permanent).

16. Lecturer In Business Administration: Five posts (5th Plan).

17. Lecturer in Assamese: One post (permanent). Spl:—M.A. in Sanskrit Literature.

Scales of Pay:

Professor: Rs. 1500-60-1800-100-2000-125/2-2500.

Reader: Rs. 1200-50-1300-60-1900

Lecturer: Rs. 700-40-1100-50-1600.

All posts carry usual allowances admissible under University rules in force from time to time.

In case where specialisation has not been mentioned against a post candidates should state their areas of specialisation at the Master's and Doctor's degree levels.

Essential Qualification:

Professor of Library Science: (a) A recognised scholar in the subject with Doctor's degree or equivalent published work, (b) Continuous research work of merit as evidenced by published papers in standard journals or published work of merit, (c) Experience of 10 (ten) years post-graduate teaching or 15 (fifteen) years Honour's teaching and (d) Experience in guiding and promoting research.

Note:—In case of a candidate of exceptional abilities with outstanding research contributions the requirement of teaching experience may be suitably relaxed.

Professor of Law:—(a) Consistently good academic record with first or High Second Class (B+) Master's degree in Law or any equivalent degree of a foreign University. (b) Experience of 10 (ten) years post-graduate or 15 (fifteen) years undergraduate teaching. (c) Experience in guiding and promoting research. Preferential:—A Doctor's degree in Law or published work of an equally high standard.

Professor of Business Administration: (a) A recognised scholar in the subject with Doctor's degree or equivalent published work, (b) Continuous research work of merit as evidenced by published papers in standard journals or published work of merit, (c) Experience of 10 years post-graduate teaching or 15 (fifteen) years Honours teaching or 15 years professional experience, (d) Experience in guiding and promoting research.

Note:—In case of candidate of exceptional abilities with outstanding research contributions the requirement of teaching experience may be suitably relaxed.

Reader:—(Arts, Science & Library Science):—(a) A Doctor's degree or published work of an equivalent high standard, (b) Consistently good academic record with first or High Second Class (B+) Master's degree in a relevant subject or any equivalent Degree of a foreign University, (c) Evidence of continuous research and (d) Experience of 5 years post-graduate teaching or 8 years Honours teaching.

Reader (Commerce & Business Administration):—(a) Consistently good academic record with first or high second class (B+) Master's degree in a relevant subject or any equivalent degree of a foreign University (b) A Doctor's degree

or published work of an equivalent high standard of other professional qualification, (c) Evidence of continuous research and (d) Experience of 5 years' post-graduate teaching or 8 years Honours teaching or 10 years professional experience.

Lecturer (Arts, Science, Library Science & Business Administration): (a) A Doctor's degree or published work of an equally high standard and (b) Consistently good academic record with first or high second class (B+) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable a person possessing a consistently good academic record (due weightage being given to M.Phil. or equivalent degree or research quality) may be appointed on the condition that he will have to obtain a Doctor's degree or give evidence of published work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Applications in plain paper in quadruplicate giving full bio-data including (1) Name in full (in block letters), (2) Father's name, (3) Date of birth by the Christian era, (4) (a) Permanent residence and address (in full), (4) (b) Present address (in full), (5) Present occupation if any and name of employer, (6) Present salary drawn (if any), (7) Detailed academic career with mark-sheets and subject studies (including Honours) in degree and post-graduate courses from Matriculation/Higher Secondary/High School Leaving Certificate Examination onwards and copies/reprints of research contributions, (8) Name and address of two referees not related to the candidate together with an application fee of Rs. 10/- (ten) (Rs. 7.50 in case of Scheduled caste/Scheduled tribe candidates) by Crossed Indian Postal Order drawn in favour of Gauhati University payable at the Gauhati-781014 post office should be sent in an inner sealed cover superscribed application for post of (Name of post applied for) Advt. No. 4 of 1977 enclosed in an outer cover addressed to Sri K. C. Bhattacharyya, M.A. (Cal.) Registrar, Gauhati University, Gauhati-781014 to reach him not later than 15th June, 1977.

The number of this advertisement and name of the post applied for must be referred to in application. Persons in employment should apply through proper channel or with a no objection certificate from the present employer.

The University has accepted the principle of reservation of posts for Scheduled caste and Scheduled tribe candidate, according to the norms of the State Govt. Candidates should submit necessary certificate from the

Deputy Commissioner/District Magistrate, if they belong to Scheduled caste or Scheduled tribe.

Candidates will be required to appear at an interview if and when called for.

Persons who had applied in response to Advt. No. 4 and 9 of 1976 for posts of Reader and Lecturer in English need not apply again. Their cases will be considered on the basis of the earlier applications.

Canvassing directly or indirectly will be a disqualification.

GURU NANAK DEV UNIVERSITY AMRITSAR

Advertisement No. 5/77

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self-addressed stamped envelope of 23 x 10 cms. so as to reach this office by 6-6-1977 alongwith Indian Postal Order (s) for Rs. 7.50 for posts at Sr. No. 1 to 3 and Rs. 5/- for posts at Sr. No. 4 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

NOTE: Persons already in employment should send their applications through their employers, otherwise these will not be entertained.

Grade (plus allowances as admissible under rules).

1. Director of Physical Education (Rs. 700-50-1000/50-1250).
2. Public Relations Officer (temporary) (Rs. 400-40-800/50-950).
3. Manager University Press (Rs. 400-40-800/50-950).
4. Steno-typist (English) Rs. 120-5-150/10-250 plus Rs. 25/- as a special pay.

Qualifications: For post at Sr. No. 1: Essential; (i) Atleast Second Class Master's degree in Physical Education with atleast 50% marks or an equivalent degree. (ii) 5 years' teaching or administrative experience in a college/University of teaching/or organising inter-collegiate sports. (iii) Qualified/efficient in coaching one or two major games. (iv) Age between 30 to 50 years.

Preferable: Inter-University/State/National representation in a game or sports.

For post at Sr. No. 2: (i) Master's degree with atleast Second Class Diploma in Journalism. (ii) Atleast 5 years' experience as Journalist in a newspaper or news-agency or a publicity organisation.

Note: Higher starting pay can be given to a deserving candidate. Condition at (ii) above is relaxable.

For post at Sr. No. 3: (i) Graduate from an Indian University or an equivalent

qualification from a foreign University. (ii) Diploma Course in Printing Technology from a recognised Institution. (iii) At least 5 years practical experience of working in a first rate printing press.

Note: Qualifications (i) and (ii) may be relaxed in case of persons with exceptionally long practical experience.

For Posts at Sr. No. 4: (i) Atleast second division Matric or Higher Secondary. (ii) Shorthand speed in English atleast 80 W.P.M. and typewriting speed atleast 40 W.P.M. (iii) Knowledge of Punjabi upto Matric standard.

**BHARPUR SINGH
REGISTRAR**

SARDAR PATEL UNIVERSITY

Vallabh Vidyanagar
Via Anand

Gujarat State

Notification No. Est/1 (1977-78)

Applications in the prescribed forms available from the University Office on payment of Re. 1/- in cash or by Indian Postal Order are invited for the following posts so as to reach the undersigned on or before 20-6-1977.

I. Teaching posts in the University post-graduate Departments:

(A) Professors: (Grade: Rs. 1500-60-1800-100-2000-125/2-2500)

- (i) Physics: in solid State Theory, Solid State Electronics, Quantum Electronics.
- (ii) Hindi

(B) Readers: (Grade: Rs. 1200-50-1300-60-1600-Assessment—60-1900)

- (i) Life Sciences: Two posts, one each in Bio-Chemistry and Plant Physiology.
- (ii) Statistics
- (iii) Home Science: in Foods and Nutrition.

(C) Lecturers: (Grade: Rs. 700-40-1100-50-1300—Assessment—50-1600)

- (i) Life Sciences: Three posts, one each in Environmental Biology or Ecology, Zoology and Microbiology.
- (ii) Home Science: in Foods and Nutrition.

II. Non-teaching posts in the university:

(i) Technician—for Physics Department: (Scale of pay: Rs. 700-40-1020-EB-45-1200-50-1300-EB-50-1500)

(ii) Stenographer: (English/Gujarati): (Scale of pay: Rs. 475-20-615-EB-20-675-25-800)

(iii) Steno-Typist: (Gujarati): (Scale of pay: Rs. 260-6-308-EB-6-326-8-350-EB-8-390-10-400)

(iv) Junior-Typist: (Scale of pay: Rs. 260-6-308-EB-6-326-8-350-EB-8-390-10-400)

III. For C.S.I.R. Research Scheme Junior Research Fellow: Rs. 400/- fixed.

Details regarding qualifications, experience, etc., will be supplied along with the application forms. Preference will be given to the qualified candidates belonging to Scheduled Castes/Scheduled Tribes.

Persons who had applied earlier need not apply again.

K. A. AMIN
REGISTRAR

MADURAI UNIVERSITY

No. 2/V/Advt./ 77.
Notification

Applications in the prescribed form are invited in the University Departments for the posts of One Professor in Geography, One Professor each in Econometrics, Ancient History, Human Geography, Sociology; Two Readers in French; One Reader each in English, Medieval History, Education, Political Science, Immunobiology, Bio-Chemistry, Plant Physiology, Microbiology, Environmental Biology, Applied Mathematics; Two Lecturers in Mathematics; One Lecturer each in Mathematical Economics, Economics, Geography, Animal Physiology, Botany, Molecular Biology, Plant Ecology, Plant Physiology, Genetics; Two Lecturers in Physical Chemistry; Two Lecturers in Organic Chemistry and One Professor of History in the Institute of Correspondence Course and Continuing Education

Scale of Pay:

Professor: Rs. 1100-50-1300-60-1600	The UGC Scales of pay will be given on approval by the Government shortly.
Reader: Rs. 700 50-1250	
Lecturer: Rs. 400-40-800-50-950	

Higher starting salary will be offered in deserving cases.

Preference would be given to Scheduled Caste/Tribe candidates who are considered fit in respect of posts of Lecturers.

A minimum of Ten years' teaching experience for Professors, Five years' teaching experience for Readers and Three years' teaching experience for Lectures at the Post-Graduate level is essential.

The prescribed form of application and full details regarding qualification, field of specialisation and experience required can be got from the undersigned on requisition accompanied by (1) a self-addressed envelope with postage stamps to the value of 0 55 paise affixed thereon and (2) State Bank of India Challan for Rs. 5/- (Account No. 1) or Demand Draft for Rs. 5/- payable at Madurai drawn in favour of Registrar, Madurai University, Madurai-625 021.

The last date for receipt of applications is 15-6-1977. Applications received after the due date will not be considered.

Palkalainagar, B. MURUGAN
MADURAI-625021 REGISTRAR

GURU NANAK DEV UNIVERSITY AMRITSAR

Advertisement No. 9/77

Applications are invited for the following posts on prescribed form obtainable (free of cost) from office of the Registrar, Guru Nanak Dev University.

Amritsar by making written request accompanied by self-addressed stamped envelope of 23 x 10 cms. so as to reach this office by 17.6.1977 along with crossed Indian Postal Order(s) for Rs. 7.50 for posts of Readers and Lecturers and Rs. 5/- for posts of Research Assistants drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

NOTE: Persons already in employment must send their applications through their employers.

Departments of Punjabi Language, Literature & Culture & Guru Nanak Studies.

Readers (2) Lecturers (9) and Research Assistants (2)

Qualifications :

Readers (Grade Rs. 1200-50-1300-60-1900).

1. Common Qualifications

- Consistently good academic record with first or high second class (b+) Masters degree of an Indian University or an equivalent qualification of a foreign University in the relevant subjects.
- Either the degree of Ph. D. or an equivalent Research Degree or published Research work of a high standard relating to any major field of Punjabi Language/Literature/Culture.
- About five years' experience of teaching Post-graduate classes and guiding research.

2. Special Qualifications

Post I

- Essential :** Master's degree in Punjabi/Cultural Anthropology/Culture with the proviso that an M.A. in Punjabi should have a rich grounding in Folklore and the one in Cultural Anthropology/Culture should have good knowledge of Punjabi.
- Preferable :** Experience of field work in culture/Folkloristics. Knowledge of Hindi/Urdu/Persian.

Post II

- Essential :** Master's degree in Linguistics / Sanskrit / Prakrit / Apabhramsa/Comparative Philology, with the proviso that the candidate must be thoroughly conversant with Punjabi Language, and its scripts and be able to apply theories of Modern Linguistics to the study and development of Punjabi.
- Preferable :** Specialization in Etymology/Grammer / Stylistics/socio-Linguistics. Knowledge of dialects of the area adjoining the Present day Punjab.

Lecturers (Grade Rs. 700-40-1100-50-1600)

1. Common qualifications

- A Doctor's degree or published work in the relevant field of an equally high standard ; and
- Consistently good academic record with Ist or high 2nd class (b+) Masters degree in the relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work, is of a very high standard it may relax any of the qualifications

prescribed in (b) above.

2. Special qualification

Post 1 & 2

- Essential :** Master's degree in Ant. Hist. and Cul./Fine Arts/Cultural Anthro./Soc. with a good Knowledge of Punjabi, or a Master's degree in Punjabi with a good knowledge of any of the above subjects.
- Preferable :** Some practical experience in the field of folklore.

Post 3 & 4

- Essential :** Masters degree in Punjabi and at least 5 years practical experience in the field of editing/vetting/translation.
- Preferable :** (a) Acquaintance with latest trends in Literary criticism; (b) Proficiency in reading manuscripts in Gurmukhi; (c) Knowledge of book production and proof-reading.

Post 5

- Essential :** Master's degree in Punjabi with proven proficiency in Modern Linguistics or Masters degree in Sanskrit/Modern Linguistics with a good knowledge of Punjabi.
- Preferable :** Knowledge of lexicography and applied Linguistics

Posts 6 to 8

- Essential :** Masters degree in Urdu. Experience of translating high medieval Punjabi or Hindi Literature into Urdu. Knowledge of Punjabi and of Sikh Scriptures.
- Preferable :** Proficiency in Sanskrit/Hindi/Persian.

Notes : (1) Established creative writers, with thorough knowledge of Sikh Scriptures/Punjabi/Hindi, who do not fulfil all the prescribed conditions may be considered if persons with requisite qualifications are not available. (2) Persons who had already applied in response to advertisement No. 21/76 of this University need not apply again.

Post 9

- Essential :** Masters degree or an equivalent degree of a foreign University in Philosophy/Punjabi/English. (ii) Either the degree of Ph.D. or an equivalent Research Degree or published Research work of high standard on any philosophical or religious subject relating to Gurmat.
- Preferable :** Proficiency in Sanskrit/Hindi/Persian.

Research Assistant (Grade Rs. 300-25-350/25-400-30-610/30-640-40-800).

1. Common qualification :

Consistently good academic record with Ist or High 2nd Class (b+) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Special qualifications :

Post 1 :

Master's degree in Punjabi with an aptitude for field work and folklore studies.

Post 2 :

Master's degree in Linguistics and or Punjabi with the proviso that M.A. in one must have proficiency in the other.

BHARPUR SINGH
REGISTRAR

THESES OF THE MONTH

A list of Doctoral Thesis Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Kocher, Harish Chandra. Measurement and correlates of hostility. University of Poona.

Anthropology

1. Biswas, Asok Kumar. Religious complex in a metropolitan fringe. University of Calcutta.
2. Dutta, Bela. Urbanism and urban social structure. University of Calcutta.

Political Science

1. Bandyopadhyay, Arunkumar. Problem of National integration in Malaya with special reference to the citizenship system between Malayan Union and Mardeka. University of Calcutta.
2. Bandyopadhyay, Chittaranjan. A study of sociological import of rural indebtedness in the district of 24-Parganas, West Bengal. University of Calcutta.
3. Baral, Jaya Krishna. The role of the pentagon in foreign policy making with reference to Vietnam: The McNamara Era. Jawaharlal Nehru University.
4. Basu, Sajal Kumar. Politics of violence: Studies with reference to West Bengal. University of Calcutta.
5. Chakrabarty, Santosh Kumar. The evolution of politics in Bangla Desh since 1947. Sambalpur University.
6. Datta, Satyabrata. Bengal legislature, 1862-1920. University of Calcutta.
7. Jagzap, Sitaram Rodaji. Communication process in Indian democracy with special reference to economic development. University of Poona.
8. Kelkar, Govind. S. Political communications and mass mobilization in the Shan-Kan-Ning Border Region, China, 1937-1945. University of Delhi.
9. Saikia, Padma Kumar. The administration of panchayat in Assam in the Kamrup District. Gauhati University.
10. Saini, Ram Singh. United States relations with South Africa with special reference to the issue of Apartheid, 1953-63. Jawaharlal Nehru University.

Economics

1. Dixit, M. R. Role of corporation tax policy in the fixed-asset investment behaviour of large private corporations in India: A micro-Economics study. I. I. T., Kanpur.
2. Lahiri, Supriya. An investment programming model for the electric power industry in Northern India. University of Delhi.
3. Naganathan, M. Federal financial relations in India: A study in relation to loans and grants-in-aid. University of Madras.
4. Nirmal Kumari. Small scale manufacturing in Jammu and Kashmir State, 1950-1971. University of Jammu.

Law

1. Venkatramiah, K. Some aspects of the law relating to International Civil Aviation. Jawaharlal Nehru University.

Education

1. Choksi, Amita Jayendra. Effects of psychological education inputs on the academic performance of primary school children. M. S. University of Baroda.
2. Sukhwai, Kailash Devi. Attitudes of married lady teachers towards the teaching profession. University of Udaipur.

Commerce

1. Balamohandas, Viswanadhuni. Ancillary industrial development: A case study of Ancillary industrial units in Visakhapatnam. Andhra University.
2. Chaudhuri, Aseshkanta Bandyopadhyay. Control and valuation of work in progress: A case study in pump manufacturing industries. University of Calcutta.
3. Pandey, Prabhakar. Chattisgarh ke arthik vikas mein sahakari adhikoso kee bhumika. Ravishankar University.
4. Patel, M. L. Optimal locations of market centres for balanced regional development of Mandla (Tribal) District. Bhopal University.
5. Subrahmanyam, Gopalam. University finances: A case study of Andhra, University, Visakhapatnam. Andhra University.
6. Sundaram, G. Commercial policy of the European Economic Community and the association agreements. University of Delhi.
7. Verma, Raghunath Pd. Worker's participation in management: A study of public sector and private sector. University of Bihar.

HUMANITIES

Philosophy

1. Bitos, Theodore George. The philosophy of Advaita as expounded in the Svarajya Siddhi of Gangadharendra Sarasvati. University of Madras.
2. Hegde, Venkataraman Subray. Gandhi's philosophy of law. Karnatak University.
3. Nighoskar, Yogini Govindrao. Universals and particulars: An essay in contextual analysis. M.S. University of Baroda.
4. Phadnis, Hemlata Suryakant. Critical examination of Mill's theory of utilitarianism. University of Poona.

Literature

English

1. Chakrabarti, Syamsundar. The common man in the poetry of Wordsworth and the fundamental difference between Wordsworth and other romantic poets in their treatment of the common man. University of Calcutta.
2. Choudhury, Subhransu Ray. T. S. Eliot and modern Bengali poetry: A study of four major modern Bengali poets. Gauhati University.
3. Raybhaumik, Harendrakisor. Henry James as a dramatist. University of Calcutta.
4. Sharma, Ram Padarth. I. A. Richards, theory of Language. University of Bihar.

Sanskrit

1. Arya, Sushma Kumari. Pauranik chintan ke alok mein Bjoj ke yuktikalptaru ke vyavahrik pakshon ka samikshatmak adhyayan: Dharmik evam rajnitik anshon ko chod kar. Vikram University.
2. Bhattacharyya, Bhupendranath. Theism in Samkhya system. University of Calcutta.
3. Chowdhary, Usha Kiran. Polity as depicted in the Sanskrit Mahakavyas of Kashmir. University of Jammu.
4. Das, Karunasindhy. Principal canons of interpretation (paribhasa) in the Paninian system of grammar. University of Calcutta.
5. Deb, Prodyut Kanti. Gopinath Dutt's Mahabharata-Stree parva: A critical study. Gauhati University.
6. Dwivedi, Kamala. A critical study of Dr. V. R. Nagar the tantraloka. University of Udaipur.
7. Dwivedi, Ramadhar. Swatantryodayapurva Sanskrit ka atihasis aur samajik upanyason ka anusheelan. Ravishankar University.

8. Ghosh, Rekha. Studies in the contribution of Gopala Nyaya Pancanama as a digest-writer. University of Calcutta.
 9. Gogoi, Lakshira. Treatment of Laksana in Sanskrit poetics and philosophical literature. Gauhati University.
 10. Goswami, Narayanchandra. Vis is tadwaita Vedante yathar chakhyati swarupam. University of Calcutta.
 11. Halder, Ira. Kavi Karnapura's Caitanya- Caritamrta and Caitanya Candrodaya: A critical study. University of Calcutta.

12. Jha, Dhaneshwer. Pushpdantpranitarya Shiva Mahin-anstrisya Shivaistritrekshu sthanam M. M. Pradumanopadhyay krita prakashit tikayaya. Kameshwar Singh Darbhanga Sanskrit University.

13. Jha, Koshalendra. Grahan Samiksha. Kameshwar Singh Darbhanga Sanskrit University.

14. Jha, Ramchander. Grah vigyanam. Kameshwar Singh Darbhanga Sanskrit University.

15. Jha, Shankar Kumar. Diwakar Udbhatt sagarasya samalochanatmakamdhyanamhuvaddhashach. Kameshwar Singh Darbhanga Sanskrit University.

16. Jha, Shrikrishan. Sankhya darshan kee shreshtata. Kameshwar Singh Darbhanga Sanskrit University.

17. Mishra, Adityanath. Dandi Banbhattyortulmatma-kanadhyayanam. Kameshwar Singh Darbhanga Sanskrit University.

18. Mohan Chand. The social condition as depicted in the Jain Sanskrit Mahakavyas. University of Delhi.

19. Prabha Kiran. Shri Harsh ke rupakon ka alochanatmak adhyayan, University of Bihar.

Prakrit

1. Satpaty, Arjun. Prakrit inscriptions in Orissa. Sambalpur University.

Hindi

1. Ananth Kamal Nath. The comparative study of Bhakti literature of Astachap poets in Hindi and Daskut poets in Kannada Karnatak University.

2. Dhasmana, Indu. Ritikaleen Satsai-kavya mein anubhaav yojana. University of Delhi.

3. Gupta, V. S. Swatantaryottar Hindi natak: Vikas aur shlp, 1947-70. University of Poona.

4. Indira Devi, P. K. Poetical works of Sumitranandan Pant. University of Cochin.

5. Kaul, Som Nath. Development and evaluation of post independence Hindi short story. Univeristy of Kashmir.

6. Khosla, Neelam. Hindi ekanki mein nari ka swarup. University of Jammu.

7. Mahato, Bhuwaneswar. Hindi ekanki ka rangmanchiya anusheelan. Ravishankar University.

8. Mishra, Girja Shankar. Tulsi sahitya ka nitiparak adhyayan. Kanpur University.

9. Narasimha Rao, K. V. An analysis of the thought in Hindi novels after independence. Sri Venkateswara University.

10. Pandey, Kailash Nath. Vastu charitra aur kala kee drishti se Tulsi kavya ka veshishtaya. University of Saugar.

11. Prabhaskar. T. G. Impact of Gandhism on modern Hindi poetry, 1930-1965. Karnatak University.

12. Rai, Shyam Narain. Influence of Sanskrit Ram literature on Ramcharitmanas. University of Jammu.

13. Raina, Ratna Kumari. Kashmir ka Hindi sahitya. University of Kashmir.

14. Razdan, Phoola Kumari. Kashmiri tatha Hindi Krishna kavya ka tulnatmak adhyayan. University of Kashmir.

15. Sinha, Bharatkumar. Swatantaryottar Hindi kavya mein jivan mulya. University of Poona.

16. Sinha, Upendra Sharan Prasad. Devkinandan Khatri: Jiwan aur sahitya. University of Bihar.

17. Suraj Bhan Singh. Hindi wakya-sanchon ka bhasha-vaigyanik adhyayan. University of Delhi.

18. Thankamani, S. Amma. Modern Hindi khand kavyas, 1900-1970. University of Cochin.

19. Verman, Sushma Kumari. Hindi kahani: Swarup aur shilp, 1960 A. D. University of Calcutta.

Assamese

1. Saikia, Purnananda. A study on Hiteswar Bor Borauh: His mind and art with special reference to the growth of sonnet and epic poetry in Assamese. Gauhati University.

Bengali

1. Raychaudhuri, Prasit Kumar. Srichaitanyadev: Bharat Parikarma-o-jatiya sanhat. University of Calcutta.

Marathi

1. Bhosale, Dasharatha Tayapa. Ravikiran Mandalachi Kavita. Shivaji University.

2. Javale, B. S. Bang aur unka sahitya. University of Poona.

3. Lohar, R. M. Ahaliyabai Holkar va tichi karkird. University of Poona.

4. Madtha, William. The Christian Konkani of South Kanara: A linguistic analysis. Karnatak University.

Oriya

1. Mohanty, Manindra Kumar. Oriya shishu sahitya. Sambalpur University.

Telugu

1. Datta, K. Sethurameswara. A study of the life and works of Rellamokonda Rama Raya kavi. Sri Venkateswara University.

2. Ramasarma, Venkata Sundara. A study of the minor poetical works of Sri Viswanadha Satyanarayana. Andhra University.

Geography

1. Chakrabarti, Kanan. Location growth and future prospects of the cotton textile industry in West Bengal: A geo-economic appraisal. University of Calcutta.

History

1. Bimal, Indra Pal. History and administration of Chhattisgarh Province, 1854 to 1861. Ravishankar University.

2. Chakrabarti, Gargi. Gandhi and the Hindu Muslim problems, 1919-29. University of Calcutta.

3. Ghosh, Ratnabali. Aspects of seventeenth century Rajasthani paintings: A study of its cultural sources. University of Calcutta.

4. Jana, K. C. Some aspects of socio-economic conditions of Orissa during the nineteenth century. Berhampur University.

5. Majumdar, Archana. A survey of printed modes in Indian textiles from Indus Valley civilization to late eighteenth century A. D. University of Calcutta.

6. Mohammed Ashikullah Khan. The formation and administration of the central provinces from 1858 A. D. to 1870 A. D. Ravishankar University.

7. Mukhopadhyay, Hasi. Political activity of the Liberal Party in India, 1919-1937. University of Calcutta.

8. Varma, Sushama Jyotiprasad. Mountstuart Elphinstone in Maharashtra, 1801-1827. University of Poona.

CURRENT DOCUMENTATION IN EDUCATION

EDUCATIONAL PHILOSOPHY

"LITERACY As a way of life" (Editorial) *Change* 8(10); Nov 76: 8-10.

Murchland, Bernard. "Eclipse of the liberal arts". *Change* 8(10); Nov 76: 22-6, 62.

Tanguiane, Sioma. "Education for individual fulfilment and social progress". *Unesco Chronicle* 22(9); Sept 76: 245-50.

EDUCATIONAL HISTORY

Barnes, Barry and Shapin, Steven. "Head and hand: Rhetorical resources in British pedagogical writing, 1770-1850". *Oxford Review of Education* 2(3); 1976: 231-54.

Gildea, Robert. "Education in nineteenth-century Brittany: Ille-et-Vilaine, 1800-1914". *Oxford Review of Education* 2(3); 1976: 215-30.

- Inkster, Ian. "Social context of an educational movement: A revisionist approach to the English Mechanics' institutes, 1820-1850". *Oxford Review of Education* 2(3); 1976: 277-307.
- Kaplan, Martin. "Most important question". *Oxford Review of Education* 3(1); 1977: 87-94.
- Laqueur, Thomas. "Cultural origins of popular literacy in England, 1500-1850". *Oxford Review of Education* 2(3); 1976: 255-75.
- Morris, Norman. "Public expenditure on education in the 1860s". *Oxford Review of Education* 3(1); 1977: 3-19.
- Silver, Harold. "Aspects of neglect: The strange case of Victorian popular education". *Oxford Review of Education* 3(1); 1977: 57-69.
- Simon, Joan. "History of education in past and present". *Oxford Review of Education* 3(1); 1977: 71-86.
- Webster, Charles. "Changing perspectives in the history of education". *Oxford Review of Education* 2(3); 1976: 201-13.
- Wilson, Ian C. "Education and politics: The education policy of the German Social Democratic Party, 1906-1922". *Oxford Review of Education* 3(1); 1977: 37-56.

EDUCATIONAL SOCIOLOGY

- Amrik Singh. "Youth activity in the universities". *University News* 15(6); 16 Mar 77: 139-40, 166.
- Sharma, G. D. "Brain drain". *University News* 15(7); 1 Apr 77: 174.
- Young, Robert B. "Educating the average". *Change* 8(10); Nov 76: 52-3.

EDUCATIONAL ADMINISTRATION

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BANARAS HINDU UNIVERSITY
(Advertisement No. 3/1977-78)

Applications are invited for the undermentioned posts. The benefit of Provident Fund/Pension, Dearness Allowance, House Rent Allowance and City Compensatory Allowance are admissible according to University Rules. The retirement age of University employees is 60 years. The appointment will be made on two years probation on all permanent posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications for posts No. 1 to 9 will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal orders for Rs. 7.50 in favour of the Registrar, Banaras Hindu University towards the application fee. Application forms alongwith the leaflet of information will be supplied free of cost by the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 on receipt of Rs. 0.40 paise stamped self addressed envelope of 23 cm x 10 cm size. Candidates called for interview for these posts will be paid actual Railway fare by the Second class plus reservation charges for sleeper, if paid, and/or actual Bus Fare from the present residence bothways by the shortest route as per University rules. No other expenses will be paid.

Application for each post be sent separately alongwith attested copies of certificates in support of the qualifications and experience mentioned in the application and be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005.

The declaration columns 2 (A) and (B) relating to association with the then banned organisations have been deleted from the revised application forms for all posts.

Incomplete application in any respect will not be entertained for consideration.

Those who are in service should apply through proper channel. M. O. or cheque will not be accepted towards the application fee.

The last date for receipt of application is 7th June, 1977.

NOTE: Those who have applied earlier in response to our previous advertisements for these posts, need not apply again.

1. PROFESSOR OF PLANT PHYSIOLOGY (Faculty of Agriculture)

Grade: Rs. 1500-60-1900-100-2000-125/2-2500.

Qualifications Essential: (1) A Doctorate Degree and/or published work of an equally high standard (2) Consistently good academic record with first or high second class Master's Degree in Agriculture / Agricultural Botany / Botany with specialisation in Plant Physiology or an equivalent degree of a foreign University. (3) About 10 years experience of Post-Doctoral research and/or teaching at a University or College (4) Ability to guide research of a high standard. **Desirable:** (1) Experience of organising/guiding research projects in the field of Plant Physiology.

2. DEPUTY MEDICAL SUPERINTENDENT (Modern Medicine)
Grade: Rs. 1100-50-1600.

Qualifications Essential: (1) M.B., B.S. or equivalent degree recognised by the Medical Council of India. (2) Post-graduate qualification in any Clinical Subject or in Hospital Administration. (3) At least 5 years experience in recognised teaching Hospital or special training in Hospital Administration. **Desirable:** (1) Any publication in the subject of Hospital Administration.

3. DEPUTY MEDICAL SUPERINTENDENT (Indian Medicine)
Grade: Rs. 1100-50-1600.

Qualifications Essential: (1) A.B. M. S. or equivalent qualification recognised by the University. (2) Post-graduate qualification in any Clinical subject or Hospital Administration. (3) At least 5 years experience in recognised teaching Hospital or special training in Hospital Administration. **Desirable:** (1) Any publication in the subject of Hospital Administration.

4. MEDICAL OFFICER (University Health Centre)

5. MEDICAL OFFICER OF HEALTH (Rural Health Centre-Dept. of P. S. M.)

6. MEDICAL OFFICER (Women) (Rural Health Centre -Dept. of P. S. M.)

Grade: Rs. 700-40-900-EB-40-1100-50-1300- plus N. P. A. admissible as per rules.

Qualifications Essential: (1) M. B. B. S. Degree or an equivalent qualification recognised by the Medical Council of India. (2) M. D. (P. S. M.) or any Clinical subject. (3) Experience of working in P. S. M. Department of Public Health Work or Domiciliary care programme or Clinical Work. **Desirable:** (1) Diploma in public Health or Clinical Work.

NOTE: The selected candidate may be attached to any Unit of University Health Centre by the Superintendent, University Health Centre (for post No 4). The selected candidates will be attached to the Departmental Urban or Rural Health Centre as per requirement. If the candidate is attached to the Rural Health Centre he has to manage his own accommodation as no Departmental quarters can be provided (for post No. 5 & 6).

7. DEPUTY REGISTRAR (One) (Temporary likely to be made permanent)

Grade: Rs. 1100-50-1600.

Qualifications Essential: (1) Graduate of a recognised University (2) At least 5 years experience as Assistant Registrar or equivalent post in a University. (3) Intimate knowledge of University Administration, Educational Planning, Examinations and/or Development. **Desirable:** (1) Master's Degree. (2) Good knowledge of Service Rules, Accounts and Audit Work. (3) Adequate knowledge of Hindi.

8. ASSISTANT REGISTRARS
Grade Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications Essential: (1) Graduate of a recognised University. (2) About five years experience of Administration and or Secretariat work in a supervisory capacity. (3) Good knowledge of correspondence, accounts, audit and personnel management either in a University or in a Central Government Department/Undertaking (4) Good knowledge of Hindi.

9. PUBLIC RELATIONS OFFICER (One)

Grade: Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications Essential: (1) Graduate. (2) Experience in Journalism. (3) Good command over English and Hindi. **Desirable:** (1) Experience of office management.

University lews

A CHRONICLE OF HIGHER EDUCATION & RESEARCH JUNE 16, 1977 80 PAISE



Dr. S. Chandrasekhar, Vice-Chancellor of Annamalai University, receiving the Bicentennial Gold Medal from Dr. Everett Kleinjans, Chancellor, East-West Centre at Honolulu.

- Library System for Higher Education
- Environmental Centres
- Examination Business
- Resource Centre for Non-formal Education
- New Pattern of Education

INDIAN INSTITUTE OF TECHNOLOGY, BOMBAY

P. O., I. I. T., Powai,
Bombay-400076.

Advertisement No. 882/77

Applications on plain paper are invited from the citizens of India for the following post on or before **28th June, 1977** by the Registrar, Indian Institute of Technology, Bombay-400076. Copies of certificates and crossed Indian Postal Order for Rs. 3/- (75 paise for SC/ST) payable to I. I. T. Bombay should be enclosed. Persons employed in Govt./Semi-Govt., organisation or Educational Institution must apply through the employer. Applicants must state:—

- (i) Name in full with address
- (ii) Qualifications such as examinations passed, date of passing etc.
- (iii) Particulars of past and present employment with salary.
- (iv) Date of birth with relevant certificate.

(v) Candidates belonging to SC/ST and Ex-servicemen should attach a copy of certificate to that effect.

POST: SENIOR TECHNICAL ASSISTANT (2 Posts)

Scale of Pay: Rs. 550-25-750-EB-30-900 plus allowances admissible under the rules.

Qualifications and Experiences: M.Sc. Geology with some experience in laboratory/research and field work. Candidates with specialisation in one or more of the areas mentioned below will be preferred.

Petrology / economic geology / geochemistry/engineering geology/geophysics.

JAWAHARLAL NEHRU UNIVERSITY

Advt. No. Aca. III/5/77

Applications are invited for the post of Registrar of the University.

Qualifications:—Essential:

- (a) First or high second class Master's degree or equivalent qualifications.
- (b) Considerable experience in a responsible position in a university or in an institution of higher education or in a similar organisation.
- (c) Ability to take organisational charge of meetings and administrative affairs of the University.

Desirable:

Skill in drafting, appreciation of finance and accounts problems and some aptitude for public relations, some interest in the intellectual processes of the University and its development.

Scale of pay:

Rs. 1500-60-1800-100-2000.

Plus usual allowances as admissible to the members of staff in Central Universities.

Relaxation in any of the qualifications may be made in exceptional cases in

favour of persons of high academic or professional distinction. Benefits of CGHS and C. P. Fund-cum-Gratuity/G. P. Fund-cum-Pension-cum-Gratuity are available. It will be open to the University to consider the names of suitable candidates who may not have applied. Both ways second class (mail) rail fare is payable to candidates invited to appear for interview from outside Delhi by the shortest route subject to production of rail receipt. Persons already in employment should route their applications through proper channel.

Applications on plain paper, giving full details of qualifications, age, experience, present pay, scale of pay, should reach the Assistant Registrar (R & C) Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110057, latest by **7th July, 1977**.

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 7/77-78

Applications, on the prescribed form, are invited for the following posts:

1. Professor of Chemistry (Inorganic Chemistry). Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications

(a) A first or a high second class Master's Degree in Inorganic Chemistry of an Indian University or equivalent foreign qualification; (b) A research degree of a doctorate standard in the subject or published work of high standard; (c) Atleast ten years experience of teaching postgraduate classes and guiding research.

2. Professor Incharge, Training & Placement, Z. H. Engineering College. Scale Rs. 1500-60-1800 plus allowances.

Qualifications:

(a) A first or high second class basic degree in Engineering; (b) Ordinarily postgraduate degree in Engineering; (c) Ordinarily ten years experience of which atleast three years should be in Industry and two years in teaching/research with a Senior position in Industrial/teaching/ research organisation.

Desirable:

Experience of supervising or arranging practical training and placement of Engineering Graduates in Industry and of looking after students welfare.

3. Reader in chemistry (temporary but likely to become permanent), Z. H. Engineering College. Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications:

(a) A first or high second class Master Degree in Chemistry of an Indian University or an equivalent qualification; Ordinarily a research degree of a doctorate standard or published work of a high standard; Ordinarily five years experience of Postgraduate teaching or

guiding research or of teaching degree classes in Engineering.

4. Lecturers in Hindi, (temporary but likely to become permanent). Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications:

(a) A Doctor's Degree or research work of an equally high standard; (b) Consistently good academic record with first or high second class (B in the seven point scale) Master's Degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for inter disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Desirable:

Some teaching experience of graduate classes.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that the will have to obtain a Doctor's Degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is **30th June, 1977**. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T. A. equal to one single second class railway fare only.

Sd/-
(Jamalur Rahman)
REGISTRAR

UNIVERSITY NEWS

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Opinions expressed in the articles and reviews are individual and do not necessarily reflect the policies of the Association.

Editor : ANJNI KUMAR

Resource Centre for Non-formal Education

The ruin of a democracy is mass illiteracy; the cancer that destroys the literate is mass unemployment. And to say that mass illiteracy and widespread unemployment are two of India's major scourges would be to emphasise the obvious. And to say in the same breath that one major reason for this state of affairs is the gaps and drawbacks of the formal educational system would be to repeat the oft-repeated.

Nevertheless facts cannot be suppressed, "52 per cent of the 56 lakh school pupils drop-out of school before Standard V, 80 per cent are out of school at Standard XI, 97 per cent of the relevant age group are just not to be found in the B.A., B.Sc., or B.Com. classes; they must be placed alongside of the 2.2 crore adult illiterates — men and women — who are mostly rural cultivators and labourers."

If this is the situation with reference to school drop-outs, of those who manage to complete the courses, 3,00,000 SSLCs, graduates and postgraduates are registered as unemployed in the Employment Exchanges in the State.

From all this it is obvious that the formal education system excludes a sizable portion of our people and those it includes it alienated from employability. This is not to detract from the necessity of the formal educational system and its positive contributions to national development in the past and in the future. This only poses a challenge to those who have concern for the underprivileged millions—to spring to action — reflection with reference to alternative modes of education.

TASKS

Non-formal Education is an alternative..... "It is possible to describe non-formal education (NFE) in Tamilnadu as the organised provision of learning opportunities outside of the formal educational system covering a person's life-time, and programmed to meet a specific need — remedial or vocational or health or welfare or civic or political or for self-fulfilment."

This concept of NFE can serve the following priority tasks in making up for the deficiencies of the formal system.

- (a) Provide out-of-school education and training in basic learning skills for school drop-outs in the age group 6-15.
- (b) Provide functional literacy for illiterate adults — farmers, rural women and individuals in the age group 15-25 — to enable working people to have a minimum of earning skills.
- (c) Providing education and training for small, marginal farmers and landless labourers, both men and women to raise their incomes and agricultural production.

- (d) Provide industrial, health and family planning, social welfare, arts and crafts, teacher and management training.
- (e) Provide continuing education in Citizenship and Community Participation.

TNBCE AND NFE

The Tamilnadu Board of Continuing Education (TNBCE) was first established in the summer of 1973 as an affiliate of the Madras Christian Council of Social Service in order to initiate a project of non-formal education for school dropouts from the slums of Madras City. This Board has taken over the reins of leadership in non-formal education over the years by promoting the concept through experimental projects, research and action programmes and through facilitating interaction between various agencies involved in non-formal education. In the course of its endeavours, the TNBCE has felt the need for establishing a Resource Centre for Non-formal Education (RCNFE).

The Resource Centre for Non-formal Education has been established with the following aims and objectives :

1. To conduct studies in the Socio-anthropological and socio-economic conditions in the villages, towns and slums in order to identify educational needs of local communities.

2. (i) To organise training programmes in non-formal education for the following categories of persons : organisers, directors, supervisory staff, inspecting staff, field workers, curriculum designers and writers; (ii) To conduct demonstrations of different methods from time to time to workers in the field and for the inspectorate; (iii) To conduct from time to time refresher courses to enable workers and inspectors to revise and update their work and maintain and improve their skill; (iv) To conduct village leadership courses.

3. (i) To devise curricula for specific needs of different human groups through field studies and analysis of needs and make them available to field workers; (ii) To develop suitable learning materials for the courses and also to establish learning materials of general value.

4. (i) To devise appropriate methods of evaluation for the different programmes of non-formal education according to their aims and objectives. (ii) To conduct evaluation seminars.

In providing consultancy services priority will be given to Government programmes of non-formal education. The Resource Centre will not be a mere generator of ideas, but is envisaged as a source of action and reflection. Because of belief in the Paulo Freirian conviction that action without reflection is mere activism and reflection without action is mere verbalism.

THE DEPARTMENTS

The Centre which came into existence on Feb 1, 1977 is made up of three departments: 1. A Curriculum Development Department; 2. A Training Department; 3. A Research and Evaluation Department.

These Departments will collaborate with each other to promote the aims and objectives of the Centre.

The Government of Tamilnadu issued orders for the starting of 374 NFE centres — one in each of the 374 Panchayats in Tamilnadu — from January, 1976. The services of the Resource Centre were commissioned for conducting training programmes of the NFE centres.

As a preliminary step, an orientation seminar on Non-formal Education was conducted for DEOs, CEOs, Inspectoresses of Girls' Schools, Inspectors of Anglo-Indian Schools from Jan. 28, to 30, 1977 at the RCNFE. The goals of NFE, the Methodology of NFE and the organisational Procedures connected with NFE centres were discussed.

In the second phase, training programmes were conducted for Deputy Inspectors of Schools first and then NFE Instructors separately at seven district headquarters for the 14 districts of Tamilnadu. The DIs underwent a three days orientation seminar, the NFE Instructors underwent a six days orientation seminar on matters related to the non-formal education. The entire round of training programmes were covered within six weeks. Dr. Rosario Gomez, Director, RCNFE, Mrs A. V. Padma, Department of Training, RCNFE, Mr P. S. Santhana Raman, District Project Officer, Tiruchirappalli, Mr M. Krishnasamy, District Project Officer, Coimbatore, Mr A. R. Kaliyamurthi, DI Directorate of NFE and Mr S. V. Ponniah DI, Kabilamalai, were the facilitators for the training programmes.

Besides these training programmes, Dr. Gomez was commissioned by the Directorate of Non-formal Education to evaluate the 200 NFE centres for the age group 15-25 in Coimbatore and Tiruchirappalli District begun on March 1.

FUTURE PLANS

The Resource Centre is presently drawing up plans to explore the possibility of linking the NSS programmes to NFE programmes. This will enable the intellectual community to contribute to the development of the not so privileged. Another scheme which is under consideration is the introduction of non-formal elements into the formal education system.

The Centre is also planning to start an experimental NFE Project in a rural setting to complement the innovative work being done in the Out-of-School Project in Santhome in an urban set-up.

[Courtesy : The Mail]

Library System for Higher Education

K. A. Issac*

The functions of a university or a college library are to help promote the objectives of higher education. Therefore in order to understand these functions, the objectives of higher education have to be defined. We have as clear and complete a statement of these objectives as possible in the report of the Kothari Commission which are reproduced below :

1. To seek and cultivate new knowledge, to engage vigorously and fearlessly in the pursuit of truth and to interpret old knowledge and beliefs in the light of new needs and discoveries ;
2. To provide the right kind of leadership in all walks of life, to identify the gifted youth and help them develop their potential to the full by cultivating physical fitness, developing the powers of the mind and cultivating right interests, attitudes and moral and intellectual values ;
3. To provide the society with competent men and women trained in agriculture, arts, medicine, science and technology and various other professions, who will also be cultured individuals imbued with a sense of social purpose ;
4. To strive to promote equality and social justice and to reduce social and cultural differences through diffusion of education ; and
5. To foster in the teachers and students, and through them in society in general, the attitudes and values needed for developing the good life in individuals and society.

Education, especially at the higher levels, has been described more as a process of learning than of teaching, signifying the self efforts to be put in by the student. It is the library that he has almost solely to depend on for this purpose. The university library has a prominent role to play in helping University education fulfil all the objectives just enumerated, but perhaps it is in respect of the first objective viz. the seeking and cultivation of knowledge that it is called upon to play the most significant role. Let me try to analyse how this is performed.

As a result of increased research activity all over the world, knowledge is expanding at a tremendous pace at the present time. The expansion is so great that we have coined the expression 'the explosion of knowledge' to refer to it which signifies a state of confusion resulting from it. The distance created by

it between what we are apt to regard as the recent past and our present times makes it no exaggeration to say that a person living in the middle to the last century was nearer to ancient times than to the young men and women of our larger cities today. According to a report, nine out of every ten scientists who have ever lived, are alive today, eighty five out of every 100 prescriptions dispensed in a pharmacy today did not exist before World War II, more than half the energy used during the last one thousand years has been consumed during these seventyfive years of our present century, and half of the papers in the field of chemistry, and even more of physics, that have ever been written have appeared within the last fifty years. Out of these, at least a quarter already need to be revised as a result of new discovery.

These statements vividly indicate a measure of the tremendously accelerated growth of knowledge which necessitates response on the part of universities. It is estimated that in the course of 7 to 8 years the total quantity of available knowledge almost doubles itself. This great expansion of knowledge tends to place a heavy load on the curriculum which has to reflect in some measure at least the existing state of knowledge. The implication of this is that the present day student has to acquire a much larger quantum of knowledge than his brother or sister student some years ago. One of the problems of higher education today which apparently defies a solution is how best to enable the student to acquire this increased quantum of knowledge without extending the total period of higher education. This has rendered the traditional teaching methods and the total reliance of the students on classroom lectures obsolete. What is called for in this situation is the provision of facilities for self study by the students to a much larger extent than hitherto by the establishment of well-equipped libraries and their closer integration with the teaching programme. The only way to check the fall in the standard of education, it seems is to recognise this positive educational role of the library.

It was this important academic role of the library that was stressed by Sir Charles Grant Robertson, a former distinguished Vice-Chancellor of one of the modern universities of England when he said : "If I were a dictator, I would reduce the time devoted to lectures to a third of that usually occupied by them, and insist on the students spending three hours every day in the library".

The following portion quoted from the Radhakrishnan Commission report aptly describes the place of the library in higher education :

"The library is the heart of all the University's work : directly so as regards its research work, and indirectly as regards its educational work. Scientific research needs a library as well as its laboratories while for humanistic research, the library is both the library and laboratory in one. Training in higher branches of learning and research is mainly a question of learning how to use the tools, and if the

**Librarian, University of Kerala.*

library tools are not there, how can the student learn to use them. President Truman's Commission on higher education says: "The library is second only to the instructional staff in its importance for high quality instruction and research". "Both for humanistic and scientific studies a first class library is essential in a University".

Similarly the Kothari Commission on Education in its report has further emphasised the importance of libraries in higher education. It asserts: "No University, College or Department should be set up without taking into account its library needs in terms of staff, books, journals, space, etc. Nothing could be more damaging to a growing Department than to neglect its library or to give it a low priority. On the contrary, the library should be an important centre of attraction on the College or University Campus."

The University Grants Committee of Great Britain has stated that the character and efficiency of a University may be gauged from its treatment of its library.

M.A. Gelfand in his book "University libraries for developing countries" states: "The fundamental role of the library is education. It should not be operated as a mere store house of books attached to a reading room, but as a dynamic instrument of education."

In the light of the points stressed above of the focal role of the library in higher education, it is needless to say that there should be an all out national effort to equip the University and College libraries adequately for discharging this role effectively.

Ever since the University Grants Commission began to be directly involved in the development of University Libraries, it has been possible to bring about significant improvement of these libraries both in respect of their book resources and organisation. The position today is that the University Libraries in the country are, by and large, in the process of being adequately equipped for lending effective support to the teaching and research programmes of the Universities. With the continued interest of the U.G.C. in this matter, and with adequate financial support based on realistic considerations like the ever increasing cost of books and journals and the need for the universities to expand their teaching and research activities, it will be possible to accelerate this trend and build up these libraries to the desired level of adequacy before long.

The position, however, with regard to the college libraries has left much to be desired. The library, as an effective instrument for the improvement of educational standards, will be able to make its presence felt by the student community and exert its wholesome influence on them only if library facilities in the college are improved and education is made more library centred than classroom centred. In our situation in which the large majority of the universities are of the affiliating type only those students studying in the colleges located in close

proximity to the headquarters of the universities have access to the University Libraries. The students studying in the other colleges who perhaps constitute 80 to 90% of the total college student community have only their meagre college library sources to fall back upon. Therefore while the students of the universities and of the colleges located in and around the university headquarters are advantageously placed in the matter of library facilities, their counterparts in other places do not enjoy this advantage.

There are colleges in the country offering post-graduate courses where the students do not have access even to a select few of the most important journals in their respective areas of specialisation and are not even aware of them. The library plays little role in their academic preparation, and their education does not involve them in anything more than listening to the lectures and reading the lecture notes which are often dictated by the teachers. It is imperative in the interest of the maintenance of educational standards to pay increasing attention to the steps that are necessary to correct this situation.

The initiative taken by the U.G.C. in starting study centres under each university is to be welcomed in this context as a step in the right direction. However, the scope of these study centres and their number have to be enlarged considerably if they are to function in such a manner as to rectify the deficiencies in the college library situation today.

What is required to improve the situation seems to be to set up an academic library system under each university. The salient features of the system are indicated below:

Each university should set up branch libraries (study centres) at places where there is a concentration of colleges. Depending on the size of each university and the number of colleges affiliated to it each university should have 5 to 10 such study centres. Each study centre should have an area demarcated for it and the students of all the colleges in that area should have access to its facilities. While the students of the colleges located near each study centre can directly use it, the other colleges should enjoy the facilities of institutional loan of books from it. Each study centre should function as a service branch of the main University Library and the librarian and the staff of the centre should work under the direction of the University Librarian. The collection of each centre should consist of standard books and journals specially oriented to the needs of postgraduate and research students. There should also be an undergraduate section in each centre.

The rationale behind the setting up of such centres is that even with the best of efforts it will not be possible to make each college self sufficient in the matter of library facilities. The library fees collected from the students form the source of revenue for each college for building up its library. This is far from adequate to buy even the essential textbooks and is far less than what should be made available

on the basis of the norms for library expenditure prescribed by the Radhakrishnan Commission and the Kothari Commission which are as shown below :

Radhakrishnan Commission	6½ per cent of university budget or Rs. 40/- per student.
Kothari Commission	6.5 to 10 per cent of the educational budget depending on the stage of development of each university library or Rs. 25/- for each student registered and Rs. 300/- per teacher.

In Kerala, prior to the recent unification of fees in the private and Government colleges, the former were collecting library fee at the rate of Rs. 15/- per student which yielded a fairly sizable amount to be utilised for building up library stocks. However, after the unification of fees, this was reduced to Rs. 2/- to be on a par with the library fee collected in government colleges pending the determination of the norms for the annual library grant to be sanctioned by the Government for each college. These norms were announced recently and the details are given below

Pre-degree course in colleges other than	
Junior colleges offering only pre-degree course	Rs. 2/- per student
Degree courses	Rs. 4/- per student
Postgraduate courses	Rs. 8/- per student
Pre-degree courses in junior-colleges	Rs. 3/- per student

On the basis of the figures of student enrolment and the number of colleges for the year 1975-76, an analysis of the financial resources available to the colleges affiliated to the University of Kerala for building up their libraries has been prepared.

It may be seen that for 104 colleges including professional junior colleges affiliated to the University of Kerala with a total enrolment of 119, 123, the total annual library grant is Rs. 387,199. This means an average annual grant of Rs. 3,723/- per college and an expenditure of Rs. 3.25 per student. This bears no comparison at all to the standards recommended by the Radhakrishnan Commission in 1948 and the Kothari Commission in 1964 when the cost of books and journals was several folds less than what it is today. With such meagre financial resources it would be impossible to develop library facilities in colleges even to a semblance of adequacy. The position may not be very different in other states also. Even if the financial picture were better, a self-sufficient library for each college, in the context of its needs for more and more books and journals to support its expanding academic programmes on the one hand and the ever increasing cost of such mate-

rials on the other, would remain an unachievable goal. This situation inevitably points to the need for cooperative endeavours of the type proposed here.

This proposal does not mean that there should be no libraries attached to the colleges. Each college should have a library consisting of the basic reference books, textbooks and a few popular periodicals. For the more serious library requirements, the students will depend on the study centre in their area either by using the centre directly or by getting down books and journals on loan. Each centre should have a mobile unit for distribution of books on loan to the distant libraries

The financial support for the centres should come from the State Governments, the UGC and the participating colleges. A portion of the library fee collected from the students by each college in the area of each centre should be made available to the centre. It should be examined whether the library fee collected from students, wherever it is abnormally low now, cannot be suitably enhanced. The share to be contributed by each college should depend on the use that can be made of the book resources of the centre by the students of the college concerned. There should be a graded system of contribution based on the distance of each college from the centre. The colleges located far away from the centre will have to have more self sufficient libraries of their own than those located close to it and hence their share of contribution to the centre will relatively be less. It is thus a question of pooling the resources for the establishment of well-equipped and well organised libraries to which the students can have convenient access. Each college, after making its contribution to the centre, should be left with sufficient funds to be utilised for building up its own basic library collection.

One snag in the present policy adopted by the UGC regarding the study centres is that there is a stipulation that each study centre should have rent-free accommodation in an affiliated college. This stipulation makes the study centre virtually a part of the college concerned, and the use of the study centre is practically denied to the students of other colleges. Therefore, it is necessary that each study centre should have its own independent site and building so that the students of all colleges can have uninhibited access to it. This would involve some capital expenditure.

The essence of this proposal is the consolidation, to the extent possible, of the limited financial resources and their utilisation for the establishment of a network of well-equipped and well run study centres which would effectively supplement the present meagre library facilities offered by the colleges to their students. The main university library, the study centres and the individual college libraries will constitute an academic library system for higher education within the jurisdiction of each university and they will be able to draw on the resources of

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Need for Environmental Centres

G. M. Oza*

Do we really not feel that we owe an obligation to protect scientifically the plants, wildlife and the entire Nature throughout the country? Do we not realise, by now, that we have willfully neglected the conservation aspects in general and rational use of biotic and allied resources of the land and fresh waters, sea and air in particular for the lasting cultural and economic welfare of mankind? In the man-dominated biosphere, very few leading centres of learning in the country have contributed significantly to our present knowledge and voiced concern on the great diversity of problems on biological conservation! Therefore, in the opinion of the author it has absolutely become desirable for the Indian universities to aim at fostering autonomous Environmental Conservation Centres to engender vigorous scientific research to ensure our future.

The basic aim of such Centres should be to correlate their activities with the members of the society and thereby make them interested in involving themselves in their day-to-day life works. An excellent motive can be achieved if Centres enlist and highlight the manifold, sinful destructive activities of Man against Nature and how best the society can profitably react to it.

Every day we do witness the destruction of our forests and wildlife. At this rate, we are nearing a stage that by the end of the present century we shall not be fortunate enough to enjoy the benefits of virgin forests and that several rare and beautiful members of our fauna shall be on the verge of extinction. It is here such Centres can put a stop to the disruption of the environment.

Are we not competent to effect changes in the environment without destroying our important ecological habitats? Is our planning also rationally relevant in alleviating the sufferings of humanity without disrupting the environment? Unfortunately, our

knowledge on the subject and the data available to us in this context are too limited. Even the methods to tackle with the problems on ecological conservation, we face, are imperfect. This does call for a methodical, systematic approach to our problems for the benefit of the society; and, if the members of the society start digesting such aspects concerning Nature, we do have a hope for prosperous and healthier environment to dwell in.

The present note should receive serious consideration of the Indian universities that irrespective of the professional ambitions their students have, they must essentially undergo a grounding on ecological conservation to be in line with the problems and potentials of the present day world. The author pleads, this is certainly justified for it has sound relevance to mankind's varied problems. The subject can go a long way in educating our worthy citizens the solution of environmental crisis.

Can we deny that our excellent environment is deteriorating gradually in recent times? Have we competently derived the benefits from our natural resources? We have to endeavour to a great extent to solve our problems of population, hunger and water scarcity. These are all national issues with which environment and conservation issues are firmly linked. But unfortunately have we *at least one* such Centre in any of our 100 universities in the country, where the university baptizes the students even the elements of conservation course? How can we neglect to learn about our environment which is *multi-dimensional, directional and factorial*? Man's environment is related with aesthetic, economic, political and social aspects and more closely with chemical, physical and life sciences.

The author advocates, through the pages of this *Journal*, that we do have an urgent need for a multi-disciplinary approach in the Indian universities especially for education on environmental problems we face today. When shall we realise that environment is not at all our enemy which needs to be won over? Do we rate it as our servant for exploitation? Can the treasure of air, land and water be possessed in an unlimited capacity?

We have our associateship in the world ecosystem. For a long period, we have devoured the fruits of such an associateship but we are not aware about the tremendous obligations we owe to such associateship. In Nature, we should have had total freedom. But the human population pressure and the advancement of science and technology have greatly added to the importance and complexity of our inter-relationship within the world ecosystem. Can our national education policy planners contribute significantly to the need for environmental conservation centres in Indian universities?

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Examination Business

V. S. Mathur*

The question of examination reform at the level of higher education seems very relevant in the present context. The question has assumed, during the years, such huge dimensions, that some desperate people have even started talking about abolishing the whole programme. That, however, might be rather an extreme step. In an area like education we cannot also afford to leave it to *laissez faire*. There is, therefore, great need to make the system as worthwhile as possible mainly as a 'device' of education.

Examinations cannot be treated in isolation. They occupy a prominent position in the educational process. It, therefore, becomes natural that the various Commissions and Committees appointed after independence on education should have paid serious attention to the question of examination reform.

Some time back as a result of the recommendations of the Education Commission, the Government of India appointed a national Committee on examinations with the Union Education Minister as the Chairman. This Committee studied the question in depth and also issued a detailed questionnaire. The report of the Committee is a land mark in the field of education.

On the basis of the recommendations of this Committee, the University Grants Commission issued a Plan of Action which was circulated to all the universities. Twelve universities were, to start with, selected to experiment with the various suggestions. Many other universities have been taking action on their own through special committees and workshops.

The main suggestions in this regard are:

1. Semester System
2. Grades instead of marks
3. Internal assessment
4. Question Banks

In some universities like the Himachal Pradesh University, the semester system had already been introduced at the Postgraduate level in all faculties and the trimester system had been in vogue in the faculty of agriculture at the various levels. More and more universities are falling in line.

The main criticism against the award of marks or numerical scores are:—

- (a) Exactness is not possible
- (b) The element of subjectivity is predominant
- (c) Whims of individual examiners sometimes play havoc.

It is claimed that grading according to 5, 7, or 9 point scales as against 101 point scales in the marking system may be more reliable and may combat the above points to a great extent.

There is no reliable data about the utility of the grading system, except what is being done in some

foreign universities as well as in some agricultural universities in the country.

The points which are usually mooted out against the grading system are:—

- (a) The spirit of competition is likely to be killed.
- (b) Some amount of subjectivity and uncertainty will always remain.
- (c) In the actual practice marks will have to be turned into grades at least in the initial stages, which kills the very purpose behind grading.

Wherever grading is in vogue, the system is intimately linked up with continuous internal assessment meaning thereby that evaluation is conducted by those who also teach. It will be dangerous to grade a person only on the basis of a single external examination.

Internal assessment provides a useful policy of evaluation because it constitutes continuous assessment. However, experience shows that in our typical conditions where a large number of students and institutions are involved, the system cannot possibly work successfully. However, if internal assessment is used only for eligibility purposes, in the first instance, it may provide a good beginning.

The main difficulty that is envisaged in this system is that the teachers might be subjected to a lot of pulls and pressures.

However, I feel that it may be a better idea if one or two good colleges in every state are taken away from the main stream and allowed to conduct experiments in internal assessment & grading, instead of a wholesale implementation of the programme.

Question Banks are a good idea provided the questions are set carefully by boards of paper-setters consisting mainly of class teachers. One or two subject experts may be appointed to guide the deliberations of the various subject Committees. The questions should be made available to the students and the teachers in the beginning of the Session/Semester.

The questions should be revised at least every two years if not every year. The revision may be based on the comments received from the teachers and on the exact performance of the candidates.

It may be worthwhile to take into consideration some other suggestions which have been made from time to time :

(a) Honour System be experimented with meaning thereby that examinations be conducted without any rigid supervision.

(b) Open book system be experimented with.

(c) Oral examination on the Russian pattern be made an integral part of the various examinations.

(d) The frequency of examination be substantially increased.

(e) Candidates be permitted to offer themselves for evaluation at their own pace after the minimum requirement. It should not be compulsory for a candidate to sit for all the papers at the same time.

(f) Candidates be required to pass in one subject only once. This will mean that the degree/diploma be awarded as soon as the candidate clears all the courses required for a certain examination.

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New Pattern of Education in the context of National Policy

It is a curious fact of history that the country always had a uniform pattern of higher education since 1859 when the first matriculation examination was held. The pattern may be described as follows : (1) The access to higher education was provided by the matriculation examination, which was the first public examination to be held at the end of the school stage. The standards to be attained at this examination were broadly comparable and the equivalence of the examination itself was recognised throughout the country and by the Central and State Governments ; (2) The duration of higher education leading to the first degree was four years ; and this was divided into two stages—the intermediate stage of two years and the undergraduate stage of two years ; and (3) The standards to be attained at the intermediate and first degree stage were again broadly comparable and the equivalence of the examination itself was accepted throughout the country and by the Central and State Governments.

any education with seven optional streams should begin in class IX (or roughly at the age of 13 or 14 for the child) ;

2. The matriculation examination (which was in existence from 1859) should be abolished and replaced by the higher secondary examination at the end of eleven years of schooling ; and

3. The duration of higher education for the first degree should be three years.

This reform created so much of trouble and so many problems. The matriculation examination should not have been abolished. It was equally wrong to break up the intermediate stage which smoothened the transition from school to university and helped to improve standards. It was also not desirable to begin 'streaming' in secondary education in class IX so that each child was required to decide his future career at the early age of 13 or 14. Consequently there was considerable opposition to the reform which never got fully accepted. It was only in Delhi and Madhya Pradesh

of higher education which the country had since 1859 and what is even worse, it created an unprecedented diversity of patterns in the country.

It was at this stage that the whole situation was re-examined by the Education Commission (1964-66). Subject to certain general principles the Education Commission recommended the adoption of the following pattern of school and college classes :

1. The matriculation examination should be continued (or revised) and held at the end of ten years of school education ;

2. There should be a diversified higher secondary stage of two years which, on the one hand, would provide access to university and would qualify, on the other hand, about half of the students to enter the world of work. This will need the addition of one year where the first degree course started after eleven years (instead of twelve). This reform may be carried out in a phased programme of about twenty years ; and

3. The duration of the first degree stage should be continued undisturbed.

While adopting these proposals, which found general support, debate centred round two main issues :

1. What should be the status and location of the higher secondary or intermediate stage?

2. Should we raise the time required to take the first degree compulsory to 15 years even in those States where it can at present be taken in 14 years?

On the first issue, there was total agreement that the higher secondary or intermediate stage should be recreated and treated as a school stage outside the purview of the universities. But opinion was divided as to whether the higher secondary or intermediate classes should be in schools only, or in colleges only, or even in separate institutions called intermediate colleges.

On the second issue, the general opinion was that ultimately we should move in the

Excerpts from the convocation address delivered by Dr. P. C. Chunder, Union Education Minister, at Nagpur University

This pattern of education remained unchanged till 1952. The Secondary Education Commission (1952) supported the view that the education and pattern, not only of higher education, but of school education as well should be uniform throughout the country and that every child should be eligible to get the first degree after a school and college education of equal duration. On the basis of its recommendations, it was decided to introduce the following uniform pattern of school and college classes (11+3).

1. The school stage should consist of eight years of elementary education and three years of secondary education (eleven years in all) and that diversified second-

that the new pattern was fully adopted. In other areas the matriculation continued to be held either by itself or side by side with the higher secondary examination at the end class X. Several States like Bombay or Madras refused to adopt the higher secondary pattern. Uttar Pradesh refused to break up the intermediate stage in two ; and in spite of all the expense, trouble and dislocation caused by this proposal, the time taken for the first degree continued to vary from 14 to 16 years as in the past. In fact, this attempt to create a uniform pattern of school and college classes was a total failure. It could not create a uniform pattern for school education. It destroyed the uniform pattern

direction of 15-years period for degree and that the States where the degree is now being given in 14 years should be allowed some time to reach this goal.

The decision finally taken and incorporated in the National Policy Resolution of 1968 was as follows :

"The Educational Structure :

It will be advantageous to have a broadly uniform educational structure in all parts of the country. The ultimate objective should be to adopt the 10+2+3 pattern, the higher secondary stage of two years being located in schools, colleges or both according to local conditions."

In this context, the Central Advisory Board of Education has recommended that a pass degree may be permitted at the end of a two-year course. But students who do the pass degree will have to put in an additional year for the honours degree (preferably by private study or correspondence course) to qualify for admission to M.A. This reform has now been under implementation for about ten years. It has been fully implemented in the States of Kerala, Karnataka and Andhra Pradesh and in the Union Territory of Lakshadweep in the sense that students have already completed the first degree course under the new pattern. It has been initiated and is at various stages of progress in the States of Assam, Maharashtra, Gujarat, J & K, Sikkim, Tripura, West Bengal and Tamil Nadu and in the Union Territories of Delhi, Goa, Daman and Diu, Dadra and Nagar Haveli, Andaman & Nicobar Islands, Pondicherry, Arunachal Pradesh and Chandigarh. In the remaining States and Union Territories, either decisions have not been taken or if taken, the implementation is yet to begin.

The matriculation examination should be held at the end of ten years of school education and that it should have broadly comparable standards and equiva-

lence in all parts of the country. There should be eight years universal elementary education for all children and the first two years of secondary education will be undifferentiated although it may have optional subjects. The student should not be required to decide his future career till he completes class X or reaches the age of about 16.

It is extremely important that the next stage—intermediate or higher secondary—should be of two years and that it should have the two-fold objective of preparing the student for the university as well as for entry into the world of work and that the latter objective should have a prior claim. This stage should be outside the purview of the universities but for administrative considerations it may be located, at least to begin with, in schools, colleges or both.

A State which so desires should be allowed to retain a two-year course for the first degree which may be called the pass degree. There may be an honours course of one year after this degree or a three-year integrated honours course after the intermediate or higher secondary stage. In all these matters the State Governments should be free to determine the policies. The country should move in the direction of adopting, over the years, a broadly uniform pattern of 10+2+3 for school and college classes, fairly comparable standards being reached at the end of class X and class XII and the first degree.

But the worst aspects of the implementation of the recommendations of the Education Commission are those that relate to content or curriculum. In the name of raising of standards, the curricula are being increased and made bigger than ever. The number of compulsory subjects taught has increased. The content of each subject has been enlarged. There are more textbooks than ever before ; and each textbook is bigger than all its

predecessors. The whole programme is based on the concept of the banking system education i.e. education whose objective is to deposit as much information as possible in the mind of the child which is assumed to be a vacuum of infinite capacity. The programme also ignores the large variety and plurality of this country where education, to be meaningful, has to be closely related to the local environment. This attempt at creating little memory machines out of all our children is wrong, educationally, psychologically and socially. We are burdening young children beyond their capacity and almost to the point of cruelty. We are also increasing the physical load they have to carry, the cost to parents and probably misusing scarce paper which can be put to several alternative uses. We are over emphasizing the imparting of information which is only one and a minor objective of education. Let us not forget that mere information does not necessarily lead to knowledge and even less so, to wisdom. Let us also not forget that there are other and more important objectives of education which we are ignoring and that this policy of ours has been increasing cramming and rote memorization and that it does not leave adequate time for several other important programmes like development of independent or creative thinking, games and sports, work-experience or social service. To remedy this sorry state of affairs the following broad lines are suggested :

1. The entire curriculum proposed by the NCERT for class I to X should be reviewed and a definite attempt made to reduce the number of subjects and the load of content under each subject. This attempt is to be done partly to reduce the overall crushing load of book-learning on children but partly to find adequate time for such programmes as work-experience, games and sports, community or national service, and development of creative thinking.

2. While broad guidelines will be laid down by the Centre regarding (i) comparable achievements to be reached at a few given point. Such as the end of class X, class XII, and the first degree course (ii) certain things which ought to be included, e.g., teaching of science or (iii) certain things which should not be done (i.e. anything that harms national integration), a very large and real freedom would be left to the State Governments to decide the curricula to suit local needs, conditions and traditions. In fact, even State is too large and too diverse a unit and we should see that the responsibility for framing the curriculum is more and more decentralised and the school studies are related, as closely as possible, to the physical and social environment in which the students live. The NCERT would be requested to work on the basis of these guidelines without any delay.

3. The policy regarding the +2 stage also needs a review. There will have to be a greater emphasis on work-experience and vocationalisation, with proper bridges between the different courses that may be offered. Steps will also have to be taken to ensure vertical mobility in the vocational courses at this stage. All available resources will have to be fully utilised for the development of vocational courses. The States will also have to be advised and assisted to prepare and implement careful plans for the location of this stage and for its eventual transfer to the school. The preparation and training of teachers for this stage, both on the academic and vocational sides, will need attention on a priority basis. All these problems will be taken up for consideration and follow up action with the State Governments.

4. At the university stage, a good deal of attention will have to be paid to the planning and organisation of pass and honours courses for the first degree and of

the courses for the second degree. Faculty development will need the highest attention and the emphasis throughout will have to be on the improvement of standards, on making higher education meaningful and relevant, and on the intensive use of available time and facilities. When the reorganisation of the courses is complete the MA or MSc degree will reach the same levels as the MPhil degree so that the duration of higher education is reduced from the present seven to five only. The UGC has been asked to take action on these lines and especially in view of constitutional responsibility of the Centre for coordination and maintenance of standards.

This policy on the common pattern of school and college classes is based on some important overall considerations which were laid down by the Education Commission itself but which unfortunately seem to have been ignored. These will be the basis of all our policies in this regard. These are : (1) The broad pattern of education in the country is still in the nature of an exotic plant. Changes should be introduced on the basis of our own indigenous thinking after taking into account what is happening outside without being dominated by it ; (2) While the basic objective of the reform is to raise standards, let us not forget that the structure, which may be regarded as the skeleton of the educational system is of the least importance. Standards will depend essentially on the intensive use of available facilities and creating a climate of hard and dedicated work by teachers and students. This attempt should be, not so much to increase time as to learn more in less time. There should be liberal facilities for students who work hard to complete a course in a shorter time and we should not increase duration unless we are fully satisfied that all available time has been fully and intensively used ; (3) The curricular reform which aims at raising standards should

not only mean giving more information. Its basic objective should be to extend the principles of basic education to all stages and to emphasize them adequately. If improved standards do not mean closer relationship with productivity, greater identification with the people, development of creativity, capacity to think independently, improved problem-solving ability, or better health and greater skill in games and sports, they are not worth the trouble ; (4) The concern for the pattern should not make us distort our priorities and sidetrack the fundamental issues in educational reform such as provision of universal elementary education, liquidation of illiteracy, equalisation of educational opportunities and transforming the educational system to become a powerful instrument of socio-economic transformation ; (5) Indian culture is essentially one of unity in diversity. The States provide the diversity and the richness which is important and for which we should give them the necessary freedom. But the Centre has to provide the unity which is equally essential ; and it should do so, not by dictatorial fiat but by working together, by evolving a federal partnership, and by providing a stimulating rather than a coercive leadership.

Correspondence courses at Bombay

The University of Bombay has instituted Diploma in Financial Management and Diploma in Operational Research for management by correspondence. Students will also be enrolled for Diploma in Higher Education on part-time basis. The Directorate of Correspondence Courses will also register students for MA and M.Com examinations as external candidates without any correspondence tuition. The university will also provide correspondence course for Intermediate Arts, B.A. Part I and II and B.Com. Part I and II for the year 1977-78

Increased intake for professional courses

(From our Special Correspondent)

The students' organisation in Poona gheraoed Mr. V. R. Patil, the Chief Minister of Maharashtra and made the government agree to double the medical and engineering seats in the State from this academic year. The Chief Minister told the students that he had already written to the Central authorities for permission to increase the seats.

The students contention was that the number of applicants for these seats this year have doubled because of the two streams of students—one from first year university course (intermediate or pre-university course) and the other from the second year of the new +2 (called 12th standard or second year junior college).

Yet the feeling behind such demands for increasing the number of medical and engineering seats is a fear that many deserving candidates in both streams cannot get admission because both cut into what each one believes to be its preserve. There is a genuine difficulty in satisfactorily dividing the seats between the streams. The State Government first thought of holding an entrance examination with a common syllabus especially drawn for it and instructed all the universities in the State to hold this entrance test. The test dates were also fixed. The competition involved in such an entrance test was opposed by various sections, on the ground that it would be unequal and unfair. The very reliability of a written examination was also questioned. The Government, with a change of the Chief Minister, later scrapped the idea and decided to set apart seats in medical and engineering colleges for both streams, in proportion to the number of candidates who appeared at their respective qualifying examinations.

Even this is opposed by some who say that the fairest way is to go by the results at the 12th standard examination or at the first year university examination whether it is pre-university or intermediate test, to arrive at the ratio of seats for each section.

The +2 stage also embarrassed the government in many ways. It took a long time to decide whether the +2 should be with the secondary school or with the university. Initially the Government was in favour of giving it to higher secondary school so that it would remain cheaper for students and parents. When the 11th standard was introduced in June 1975 more than 1200 schools in the State were allowed to open it and these schools were financed by the Government to open laboratories. But this year the government decided to allow the schools to keep the 11th standard only if they would open the 12th standard. In 1976 it allowed the colleges to open the 12th standard and this year the 11th standard also.

Now higher secondary school face stiff competition from colleges and prefer to bow out. Many schools have decided to close down their 11th standard for various reasons. The main reason is that the college will attract more students because of the facilities and glamour. While opening the 12th standard to meet the governmental condition, the schools have to find more classrooms, more staff and facilities. Good teachers will not be available for want of higher salaries, better amenities and promotion chances. Only schools in areas not served by any college will get adequate number of students to make the higher secondary section viable.

The introduction of +2 in higher secondary schools resulted in the retrenchment of many college teachers in the last two years. Now the schools closing down their 11th standard will retrench many teachers and this step will be an issue in the coming months.

The continuance of the 11-year schooling in the state has also created anomalies. A few colleges in some parts of the state are allowed to run the intermediate or pre-university course for those who complete their 11-year schooling. This section being very affluent is very vocal in its demands such as more seats in medical and engineering colleges. Those who have completed their 11-year education in elite schools have already started complaining about the non-availability of their first-year university course in the nearest college.

There is also uncertainty as to who should hold the +2 examinations. In a belated decision, the schools were asked to hold the 11th standard examination. The Board of Higher Secondary Education held the first 12th standard examination in March 1977, after the government kept schools and parents in prolonged suspense. Now the government has not made it clear whether the future 11th and the 12th standard examinations will be held by the board or schools, or colleges or universities. But people guess that the government will not let go the income from 12th standard examination now being held by the Board. The government is not likely to scrap the Board and surrender everything to universities.

While the uniform pattern was formulated, it was intended to have a higher academic content and various reform-oriented syllabi were adopted. But many good courses are just not available in schools or colleges at the +2 stage.

Problems of professional courses in Karnataka

(From our Special Correspondent)

The intake of students to engineering colleges in Karnataka has been rationalised. Based on the recommendations of an expert committee appointed by the State Government, the intake to 15 engineering colleges, affiliated to Bangalore, Mysore and Karnatak Universities, in the coming academic year has been fixed at 2,581.

The University Visvesvariah College of Engineering in Bangalore gets the biggest quota of 335. Two colleges, one at Suratkal and the other at Manipal, both in South Kanara district and affiliated to Mysore University, have been allowed to take 250 students each. The quota for three colleges in Bangalore and one at Tumkur, 60 km from Bangalore, all run privately and affiliated to Bangalore University, has been fixed at 180 each. The remaining colleges at Mysore, Hubli, Hassan, Davangere, Mandya, Bagalkot and Gulbarga will admit 132 students each.

Ten per cent of the sanctioned intake for each course is, however, reserved for "repeaters" who have to attend classes in order to take the examination. This intake excludes those taking part-time evening courses and condensed course (day-time).

A 10-member committee headed by Dr. K. A. V. Pandalai, Director, Indian Institute of Technology, Madras, and including, among others, Professor T. R. Doss, retired Vice-Chancellor of Jawaharlal Nehru Technological University, Hyderabad, was asked by the Karnataka Government to go into the question of intake of students to engineering colleges since an unplanned expansion in admissions in the past had an undesirable effect on the quality of education. For example, in the academic year 1975-76, 2,924 students were admitted to the 15 colleges while last year the number rose to 3,022.

Except for the Siddaganga Institute of Technology at Tumkur,

all the colleges appear to be satisfied with the quota allotted to them. The institute has represented to the State's Minister for University Education to increase its quota of 180 as it feels it is not commensurate with its five faculties.

The Jawaharlal Nehru Medical College at Belgaum, run by the Karnatak Liberal Education Society and affiliated to Karnatak University finds itself in a spot. The State Government has withdrawn the quota of 75 seats allotted to it for the coming academic session for violating its order on the collection of capitation fee and admission of candidates.

Some time ago the Government issued a show-cause notice to the KLE Society running the college on grounds of irregularities and malpractices in admission of students and collecting exorbitant capitation fee, as much as Rs. 75,000 per seat. The charges, among others are that the college management admitted 81 students last time against the quota of 75, some of them not even going through the qualifying examinations, and collected Rs. 11 lakhs as "black capitation fee" without issuing receipts. Capitation fee authorised by the Government is Rs. 5,000 for students from the State and Rs. 35,000 for those coming from outside.

The President of the KLE Society and the Dean of the college have justified the admission of 81 candidates on the ground that the selections were made before the issue of the Government Order on December 30, 1976. The State's Health Minister, however, asserts that, according to records, the interviews were held only three months ago. The Minister has warned the Society that if it persists in the selection of candidates for admission to the coming academic year, the Government will not hesitate to withdraw the clinical and other facilities to these candidates. However, if the

Society abides by the Government directions, the quota would be restored.

Karnatak University is concerned over the State Government's reported decision to take over admissions to postgraduate medical courses from the purview of the university. The university, which runs the Postgraduate Medical Centre at the Karnatak Medical College, Hubli is reported to have told the Government that it is prepared to close down this centre if the decision is enforced.

Running of postgraduate courses, the University authorities feel strongly, is their prerogative. Regulating admissions and laying down criteria are integral to the postgraduate system and these cannot be handed over to another agency.

Karnatak University admits nearly 100 students every year for 16 degree and diploma postgraduate medical courses.

The University authorities have made it clear to the Government that if the postgraduate courses are discontinued, it (Government) will have to start from scratch in seeking affiliation from the Medical Council of India.

Personal

1. Dr. B.R. Bhonsle has been appointed Vice-Chancellor of Marathwada University.
2. Dr. D.P. Singh has taken over as Vice-Chancellor of Haryana Agricultural University.
3. Prof. Ram Joshi has taken over as Vice-Chancellor of University of Bombay.
4. Prof. K. Satchidananda Moorthy, Vice-Chancellor of Sri Venkateswara University has been invited to participate in the World Conference of Religious Workers to be held in Moscow.
5. Prof. Probodh Chandra Sen has been made the Emeritus Professor of Visva-Bharati. This honour is in token of recognition for his works and contribution to Bengali language and literature.

Population environment workshop

A two-day workshop on population and environment was held at the Regional Labour Institute, Adyar, Madras under the auspices of the Indian Youth Population Coalition. The Department of Environmental Hygiene, Government of Tamil Nadu, the National Environmental Engineering Research Institute and the Regional Labour Institute, Ministry of Labour, Government of India collaborated with IYPC in organising the workshop. The M.S. University of Baroda was represented by Prof. C. H. Pathak, Dr. S. D. Sabnis and Mr. Kamlesh Lulla.

The Indian Youth Population Coalition was founded in 1974 at the time of the world population year. It aims at bringing together youth and student groups working on population and development issues. It works to facilitate the participation of youth and youth organisations in popular programmes and coordinate their activities with the governmental and non-governmental agencies, conduct research and evaluation of activities in the spheres of population, employment, education, social change and development and economic problems. The IYPC felt that the population problem is a multifaceted one and demands a comprehensive approach which sees the problems of illiteracy, malnutrition, disease, unemployment and inequality in their proper perspective as manifestations of the population issue. Environmental degradation resulting in increasing ecological imbalances is one of the ways in which the population manifests itself.

The workshop on population and environment was intended to create a proper awareness of the problem as a pre-requisite to appropriate action. The focus of the workshop centred around the causes of environmental degradation in India, air, water and

noise pollution, environment and health, conservation of natural resources, the legislative approach to solving environmental problems, metropolitan growth management, energy and environment, the role of women and youth in the environmental movement and the new international economic order and the environment.

Nehru fellowships announced

The Jawaharlal Nehru Memorial Fund has announced the Nehru Fellowships awards to Mr. Amrit Rai of Allahabad and Dr. Sivraj Ramaseshan of Bangalore.

Mr. Amrit Rai is a distinguished Hindi novelist and short story writer. He has several publications to his credit including novels, collections of short stories and belle-letters, plays, books of literary criticism and many translations from English, Urdu and Bengali. Mr. Rai is also a recipient of Sahitya Akademi award.

Dr. Sivraj Ramaseshan has specialised in the areas of, crystal optics, anomalous scattering of X-rays and neutrons, low temperature crystallography. He started his research career under late Prof. C.V. Raman at the Indian Institute of Science, Bangalore. He is also a recipient of the Bhatnagar Memorial Award. At present he is the Head of the Materials Science Division, National Aeronautical Laboratory, Bangalore.

Mr. Rai's subject of study during the two years of the fellowship will be a research into the origin and development of Hindustani and an investigation into the causes of its retardation and bifurcation which will involve a study in the social dynamics of the origin and development of the Hindustani language. The subject is one of great contemporary relevance in the perspective of both national integration and

secularism. The study will have a bearing on the vexed Hindi-Urdu problem which in turn has a bearing on the question of a simple and easily comprehensible state language.

Dr. Ramaseshan will work on the life and work of Prof. Sir C. V. Raman. His study will cover the biographical aspects of Prof. Raman's life, his scientific works including preparation of a bibliography and analysis of important aspects that emerged from Prof. Raman's work and also his impact on Indian science.

The Fund has so far awarded fiftyone fellowships, each carrying a monthly stipend of Rs. 3,000 and an annual grant of Rs. 10,000 towards secretarial assistance, travel and contingencies.

U.G.C. career awards for scientists

The University Grants Commission has approved a scheme of three-year career awards to promising young scientists to enable them to devote themselves wholeheartedly to research and study. The awards will be open to lecturers and readers who are below 35 years of age and have completed post-doctoral or equivalent professional training in their areas of study. The awardee will get full salary and allowances and earn normal increments and maintain seniority during this period. The Commission will provide each awardee research grant up to Rs. one lakh. The teachers selected for the award can carry out their research and study in their own institutions or in any other approved institutions within the country. During the period of the award however they will not be allowed to leave the country without permission and that too for a maximum period of six months. The total number of awards at any time will not exceed fifty. The selection will be made by the Commission on the recommendations of the Standing Committee constituted for this purpose.

New degree/diploma courses

The Calcutta University has introduced diploma and certificate courses in Indian languages for foreigners. They include Hindi, Bengali, Urdu, Arabic and Persian. The grading system would be introduced in the Political Science Department, Radio Physics and Master's in Management courses. The university is also planning to institute MD course in Forensic Medicine.

With effect from May 1977 the Indian Institute of Social Welfare and Business Management has introduced a certificate course in social work and labour welfare. A specialised course in personnel management is also under study.

The introduction of two-year postgraduate course in business administration has to some extent antagonised the diploma students. They complain that this step is likely to reduce their job opportunities and simultaneously enhance the competition in the industrial sector. The authorities of the Institute of Social Welfare and Business Management are not much concerned over the situation. A recent all-India study in Management undertaken on regional basis merely indicated that a diploma course cater to the needs of students already in service. This principle has been adhered to with the argument that their services can be properly utilised in respective universities. With the advent of the five-year plan and industrial growth there was an urgent need to step up the number of management trained personnel. To meet this demand, courses for freshers were opened up all over the country. The Indian Institute of Management was set up with the purpose of imparting education in management studies. As regards the professional studies the syllabi for both diploma and certificate courses were the same so that training was more or less was also the same.

INDIAN SCHOOL OF MINES DHANBAD-826004

No. 615007/77

10th June 1977

Admission to Post-graduate Programmes—1977/78

Applications are invited from candidates possessing the requisite qualifications for admission to the following postgraduate programmes being conducted (or likely to be conducted) at the Indian School of Mines, which is a deemed university under the University Grants Commission Act :

Programme	Department
I. Two-year Industry-Oriented MTech Programme in Mining (Specialisations offered : Coal Mining/Metalliferous Mining/ Mine Planning and Design/Rock Mechanics/Mine Environment/ Design of Blasts/Mine Safety Engineering)	Dept of Mining Engg
*IA. Three-year part-time MTech Programme in Mining (The course structure is similar to that of Programme VII)	Dept of Mining Engg
II. Two-year Industry-Oriented M Tech Programme in Opencast Mining	Dept of Mining Engg
III. One-year M.Sc. (Tech) Programme in Mineral Exploration	Dept of Applied Geology
IV. One-year M.Sc. (Tech) Programme in Mining Geophysics	Dept of Applied Geophysics
V. One-year Industry-Oriented DISM Programme in Mineral Engineering (Candidates desirous of working for M Tech degree would be required to spend an additional year on project work)	Deptt of Chemistry, Fuels and Metallurgy
*VI. DISM/MTech Programme in Industrial Management	Deptt of Industrial Engg and Management
(This course consists of three terms of course work each of 12 week duration. A student successfully completing any one of the three terms course would be awarded the Postgraduate certificate of CISM. A student completing any two terms with additional guided project work of 4-month duration would be awarded the Postgraduate Diploma of DISM, while one completing all the three terms with guided research work for one year would be awarded the M.Tech. degree in Industrial Management)	
VII. Three-year Part-time MTech Programme in Mining Machinery (In this Programme, the first two years are devoted to course work, and the third year to a project/dissertation. For course work, students attend evening classes, on four days per week).	Dept of Engg & Mining Machinery

*Note:—Programme Nos. IA and VI are new ones, likely to be started this year.

2. Eligibility requirements for the different programmes are given below:

- I/IA MTech Programme in Mining : A degree or equivalent in Mining Engg.
- II. MTech Programme in Opencast Mining: A degree or equivalent in Mining, Civil, Electrical or Mechanical Engg, or MSc degree in Applied Geology.
- III. MSc (Tech) Programme in Mineral Exploration : MSc or equivalent degree in Geology or Applied Geology. Preference will be given to candidates holding qualifications in Applied Geology.

- IV. **MSc (Tech) Programme in Mining Geophysics** : MSc or equivalent degree in Geophysics or Applied Geophysics.
- V. **DISM/MTech Programme in Mineral Engineering** : A degree of equivalent in Mining, Electrical, Mechanical, Metallurgical or Chemical Engg or M Sc in Chemistry or Applied Geology.
- VI. **DIS/M MTech Programme in Industrial Management** : A degree or equivalent in any discipline of Engg with at least 6 months training in Industry.
- VII. **M Tech Programme in Mining Machinery** : A degree or equivalent in Electrical or Mechanical Engg.

In each case, the candidate should have obtained at least 60% marks in the qualifying examination relaxable to 50% for sponsored candidates and for those with field/research experience or special aptitude for research.

3. Preference will be given to sponsored candidates. (Sponsorship in this context means retention of lien on post and grant of suitable allowance). Applications of sponsored candidates should carry suitable endorsement by the employer.
4. **Scholarships** : Un-sponsored MTech students are eligible for a scholarship @Rs. 500/- p.m. and un-sponsored MSc (Tech)/DISM students @ Rs. 400/- p.m.
5. **Procedure for applying** : Applications are obtainable from Registrar, Indian School of Mines, Dhanbad—826004 on sending a self-addressed envelope carrying postage stamps of the value of Rs. 2.65 superscribed 'P.G. ADMISSION'.
6. **Closing date** : Completed applications together with (i) mark-sheets relating to the final as well as the penultimate year examination of the qualifying examination, and (ii) documentary evidence of practical experience (where required) should reach the undersigned by **9th July, 1977**.

For further details of each programme, the concerned Head of the Department may be contacted.

S. K. BORDIA
REGISTRAR

New medical courses in Andhra Pradesh

The two medical colleges, Rangaraya Medical College, Kakinada and Kakatiya Medical College, Warangal would be soon having postgraduate degree and diploma courses in all pre-clinical, para clinical and basic clinical subjects like medicine, surgery, gynaecology, ophthalmology and otorhinolaryngology.

New courses will also be started in other medical colleges. The Deans of Faculties of Medicine of all the five universities in the State met Dr. L. Suryanarayana, Additional Director of Medical Services and emphasised the urgent necessity and need for these postgraduate courses in medical faculties. At this meeting the rules for admission for the postgraduate courses were also discussed.

In the Osmania University Medical Colleges M.D. courses

are to be started in venereology, tuberculosis and paediatric surgery. The Andhra Medical College, Visakhapatnam will offer M.D. in social and preventive medicine and M.D. in tuberculosis and chest diseases.

Postgraduate courses in orthopaedics, paediatrics, anaesthesia and diploma in forensic medicine will be started in Kurnool Medical College. The Sri Venkateswara Medical College, Tirupati will offer M.S. in orthopaedics, diploma in medical radiology and diploma in tuberculosis and chest diseases.

The admission rules are likely to be uniform in all the eight medical colleges of the state and the selection is to be made on merit. D.M. course in cardiology in the Nizam's Institute of Advanced Medical Specialities may also be started. But it was thought that this course be initiated after proper preparations.

Annamalai VC honoured

Dr. S. Chandrasekhar, Vice-Chancellor of Annamalai University was awarded the Bicentennial Gold Medal by Population Dynamics of Seattle, Washington and the Sunnen Foundation of St Louis, Missouri. The award citation said that Dr. Chandrasekhar was India's Minister for Health and Family Planning from 1967-70 and a prolific writer of books and countless articles on Asian population problems. An eloquent and tireless speaker to audiences in more than 100 countries, he has brought population awareness to the public as has no other demographer. The medal was awarded in recognition of his scholarship, his contagious energy and the magnitude of his solutions which are commensurate with the problem. The medal was awarded at a ceremony preceding his presentation of the 1977 Dillingham Lecture at the East-West Centre in Honolulu.

Sports tribunal to be set up

The Indian Olympic Association is planning to devise a formula by which a tribunal would consider all disputes relating to sports organisations in the country. The Association would request the Union Government for enacting such a legislation.

The proposal has been mooted in view of the continuing stalemate in many national and sports organisations which have been rendered *hors de combat* due to litigation and have contributed to lowering the standards in the field of sports. It is proposed that the tribunal be set up under an Act of Parliament and should be authorised to deal with all matters connected with sports and sports organisations in the country. The question of India's participation in the commonwealth games in Edmonton in September next year and the asian games in Bangkok are also likely to be discussed at the annual meeting of the Association to be held in July this year.

Need for lead colleges

Prof. B. Ramachandra Rao, Vice-Chairman, University Grants Commission recently inaugurated a three-day southern regional conference on college science improvement programme at Mysore. The conference was organised by the Mysore University Postgraduate Department of Physics. Prof. Rao in his address suggested that there should be lead colleges in the country to initiate innovation programmes. It was high time that the university seriously thought of giving autonomy to few selected good colleges.

Prof. Rao also analysed the problems facing the science education in the country. The obsolete curriculum and the syllabus, inadequate laboratory facilities, low-standard textbooks, non-availability of teaching aids, out-moded examination system laying stress on memory, lack of selective admissions, regional imbalances and neglect of weaker section were some of the major problems which needed urgent attention.

During the last two decades the pressure on examinations was so much that it led to lot of malpractices. This could be gradually eliminated by such methods as internal assessment, question banking system. He revealed that the Commission was taking steps to strengthen the science improvement programmes to postgraduate courses also. He stressed the importance of restructuring science courses as early as possible. There was also need for reorientation courses. Prof. Rao regretted that laboratory instructions have not improved over the years. It was easier to change curriculum and syllabus but the apparatus remained the same. He appealed to teachers in the Universities to realise their duties and responsibilities and to improve the teaching programmes and methodology.

Mr. D. V. Urs, Vice-Chancellor of Mysore University referred to Prof. Rao's plea for giving autonomy to a few selected colleges. He emphasised that

the autonomy once granted should be well preserved.

Excavation plans for Garhwal

The University of Garhwal has prepared an elaborate plan to unearth the remains of an ancient habitation at Ranihat across the Alaknanda. The preliminary work done so far has revealed that the history of this region is about 500 years older than the Christian era. Dr. N.P. Nautiyal, Head of the Department of Ancient History, Culture and Archaeology, Garhwal University, has already discovered the remains of three different periods dating from the sixth century BC to eighth century A.D. From the excavations it is clear that the people of this period knew the art of smelting copper and iron as is indicated by such finds as iron and copper slags, arrow-heads, fish-bones and needles. Considerable amount of charcoal and burnt bones found during the excavations leads to the conclusion that the early inhabitants were meat-eaters. No idea of housing plans has been possible since diggings have been carried out in a very small area.

Conventional red ware of different shapes found in the second layer compares well with the pottery types found in the Gangetic plains. The main pottery, however, is degenerated black ware with a very high gloss. A brick floor 1.5 metre square with a heart full of coal and ash flanked on one side by a brick wall shows that the people of the period used bricks for building houses. Though the size of most of the bricks is standard Mauryan, some are wedge-shaped also suggesting construction of some sort of a circular structure. The foundations of the walls are well laid pebbles and stone rubble. Chisels, spearheads, a knife with bone handle terracottas wheel-discs and decorative spouts have been found in one layer. Structures made of stones and bricks suggest that it may be as old as the second century BC.

It appears that the site was abandoned at the beginning of the Christian era and was reoccupied only about the eighth century AD. The pottery of this period is characterised by knife-edged bowls. The houses were built of dressed-stones as are found in the tenth century temple at Ranihat. Based on these preliminary report a detailed plan is being worked out by the University to be submitted to the Archaeological Survey of India for necessary financial assistance.

Economic survey of Garhwal resources

A techno-economic survey of the Tehri Garhwal is being carried out by Lucknow University's Centre for Research and Training in Rural Administration. The report is expected be ready by August next. On the basis of the data collected by the Centre the U.P. Government proposes to prepare a ten-year perspective plan for economic development of the district. The survey will, among other things, cover the district's natural endowments and its potentiality for development, constraints of available resources, problems of operation and attitude of people. It will identify causes of disparities in incomes and specific problems in different sectors of economy. An important aspect of the survey is the preparation of a comprehensive inventory of resources and assessment of the existing level of development as also of potential for growth of agriculture, horticulture, forestry, animal husbandry, pisciculture, irrigation, power, mining, industries, transport communication, tourism and social and utility services.

The survey report will also include an analysis of the prevailing socio-economic set up in the district and employment position besides availability of institutional and other infra-structural facilities. The Central Government will also be involved in the survey since Tehri Garhwal has been included in its integrated rural development project.

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Dwivedi, Jagdish Pd. Study of stress distribution on an isotropic sphere developing penny shaped crack. Bhopal University.
2. Jena, Subas Chandra. Some aspects of the absolute summability of fourier series and allied series. Berhampur University.
3. Mangalik, R. C. A study of special functions with special reference to difference calculus methods. Jiwaji University.
4. Mishra, S. K. A mathematical study of multiphase fluid flow problems in porous media. South Gujarat University.
5. Pandey, S. N. A study in the convolution structures for special orthogonal expansions and their applications. Bhopal University.
6. Raj Kumar. Contributions to summability. Vikram University.
7. Rajasekharan Mohansingh. A study of fatigue fracture in different solids under various stress cycles. Karnatak University.
8. Ramakrishnan. T. S. Some mathematical models for optimal planning decisions. I.I.T., Kanpur.
9. Sinha, Siya Ram. Ancient India's contribution in the field of decimal place value system of numeral notation. University of Bihar.
10. Sriramachandra Murty, Malapaka. Longitudinal dispersion of absolute in liquids through circular pipe. Andhra University.

Statistics

1. Deshpande, Madhukar Narayan. Some aspects of sampling from finite population. Marathwada University.

Physics

1. Ghosh, Ashit Baran. Ionospheric and tropospheric refraction errors in satellite system and radars. University of Delhi.
2. Gokhale, M. P. Analysis of some higher order electromagnetic effects. I. I. T., Bombay.
3. Khatib, Syed Abrar Husain. Heat transfer through fluids: Some experimental investigations in conducting and insulating liquids subjected to radial electric fields. Nagpur University.
4. Koul, Radha Krishan. Some investigations on deep inelastic trident electro-production processes. University of Kashmir.
5. Pande, Madan Kumar. Studies on microstrip circuits with special reference to thin film Bi_2O_3 overlay. University of Poona.
6. Sona, Ram Pandita. Some investigations of high energy lepton induced hadronic reactions. University of Kashmir.

Chemistry

1. Bhatia, Subhash Chander. Crystal structure determination by x-ray diffraction:
 - (i) Structure of bis-(N-cyclonexyisalicylaldiminato) nickel (II).
 - (ii) Structure of bis-(N-allylsalicylaldiminato) copper (II).
 - (iii) Preparation and preliminary studies of some compounds containing Cu, Ni, Co and Ti. Kurukshetra University.
2. Bhatnagar, Gokal Kishore. Synthesis of castor oil derivatives potentially useful for plasticisation of PVC resins. Kurukshetra University.

3. Deshmukh. Ashok Ambadasrao. Synthesis of nitrogen heterocycles of potential pharmacological interest. Marathwada University.

4. Deshmukh, Kanchan Govindrao. Studies in solid state chemistry. Marathwada University.

5. Dina Nath. Synthesis and characterization of mono and bis (cyclopentadienyl) titanium (iv) derivatives. University of Delhi.

6. Fulwadiwala, P.B. Antituberculosis compounds, disubstituted acetic acids and their derivatives. South Gujarat University.

7. Gunwant, Madhaorao Kihhikar. Spectrophotometric studies of some water soluble chelates of hafnium with organic dyes. Nagpur University.

8. Gupta, B K. Studies in rearrangements of N-halo anilides. Jiwaji University.

9. Hadkar, Ulhas Balkrishna. Studies in sulphur corrosion in hydrocarbon processing. Nagpur University.

10. Harjinder Singh. Chemistry of rhenium: Studies in the preparation of oxopentachlore complexes of hexa and penta valent rhenium. Kurukshetra University.

11. Ingleshwar Shashikant Prabhudev. Heterocyclic boron compounds. Shivaji University.

12. Kogekar, Ramesh Gopal. In-vitro studies on the biosynthesis of penicillin the mechanism of joining the side chain acids to 6-aminopenicillanic acid. University of Poona.

13. Krishan Lal. Condensed carbocyclic compound. Kurukshetra University.

14. Kulkarni, Shashikant Gangadhar. Studies in metal-complexes. Marathwada University.

15. Patel, K.K. Studies on chelates. Saurashtra University.

16. Pullarao, Sri Yedluri. Some new analytical applications of cacotheline and F-benzoquinone. Andhra University.

17. Ram Naresh Singh. Synthetic applications of carbenes. Vikram University.

18. Rupenaguntla Sambasiva Rao. Electrometric and spectrophotometric investigations on the chelating and chromogenic properties of some aroyl hydrazines. Andhra University.

19. Sathe, Jayant Vishwanath. Modification of tetracyclic triterpenes into steroid hormones analogs. University of Poona.

20. Shah, K. J. Studies on metal chelates. Saurashtra University.

21. Shakuntla Devi. Light-induced reactions of some carbonyl and halogenated compounds. Kurukshetra University.

22. Sinha, Neelam. Photo-addition reactions and synthesis of polynuclear aromatic hydrocarbons. Kurukshetra University.

23. Vyawahare, Anil Ramchandra. X-ray studies of parovakites and related compounds. Nagpur University.

Earth Sciences

1. Adyalkar, Pandurang Ganpatrao. Ground water potential of the upland alluvial valleys of India. Nagpur University.

2. Jayaraman, S. A study of the water-mineral equilibria in the river Ganges. Jawaharlal Nehru University.

3. Madhupratap M. Studies on the ecology of Zoo plankton of Cochin back-water. University of Cochin.

4. Maratha, Shashishekhar. Shankar Petrology and structural peculiarities of the Godavari Valley Basalt near Nasik, M. S. Nagpur University.

5. Pachauri, Ashok Kumar. Stratigraphic and petrographic studies of the rocks of purola area, Kumaon-Garhwal Himalaya, Districts Uttarkashi and Dehradun, Uttar Pradesh. University of Delhi.

6. Sagar, Surinder. The structure and petrology of the lava flows of the Deccan traps and associated intrusions around Mahaeshwar M. P., India. Vikram University.

7. Shastri, Balkrishna Vishwanath. Petrology and petrochemistry of rocks of South Wainganga Valley in Balaghat District. Nagpur University.

Engineering & Technology

1. Angal, R. D. Surface phenomena in metallurgy. I. I. T., Bombay.

2. D. K. Singh. Kinetics of oxidation of sodium dithionite. I. I. T., Kanpur.

3. Davinder Singh. Similitude parameters to predict forces on tillage tools. Punjab Agricultural University.

4. Deshpande, S. D. Studies in inorganic pigments. I.I.T., Bombay.

5. J. Egbal. Hydrocracking of heavy petroleum fractions. I. I. T., Bombay.

6. Joshi, B. B. Dynamics of flexible rotor bearings systems. I. I. T., Bombay.

7. Korgaonkar, M. G. Optimization in production smoothing problems. I. I. T., Bombay.

8. Kulkarni, Suresh Savaram. Dynamics of frames, with special reference to undercarriages of railway wagons. Nagpur University.

9. Paranjpe, S. A. Interrelation of crack displacement with stress intensity factor and J-integral. I. I. T., Bombay.

10. Sadananda, R. Descriptive inference in pattern recognition. I. I. T., Kanpur.

11. Sankara Rao, Paladugu Sayee. Study of the laminar forced convective heat transfer and pressure drop in channels of trapezoidal cross section. Andhra University.

12. Srinivasan, T. M. Investigation on the correlation of process parameters with the qualities of sinters from rourkela iron ore. I. I. T., Bombay.

13. Subramanyam, B. Optimal and sub-optimal controls and strategies for improving transient stability of power system using new concepts. Kakatiya University.

14. Vasu Deo. Hydraulic characteristics of sediment transport in horizontal pipes at optimal conditions. I. I. T., Bombay.

15. Venkata Rama Rao, A. On the structural changes in eutectics and the evaluation of factors affecting the changes. Nagpur University.

16. Venkatraman, G. Petrology of the granitic and associated rocks around Kalyadi Hassan District, Karnataka. I. I. T., Bombay.

BIOLOGICAL SCIENCES

Biochemistry

1. Bhandari, Sneha Deep. Studies on rat intestinal phytase. M. S. University of Baroda.

2. Kamalakar Vishwanath Shankhapal. Studies on some fungi resistant to commonly used fungicidal or fungistatic coatings on Nagpur mandarin orange (citrus reticulata blanco). Nagpur University.

3. Mungikar, Avinash Madhukarrao. Alterations in drug metabolizing enzymes and lipid peroxidation due to organic solvents. Marathwada University.

4. Saramma Kuriakose. Studies on lemon (citrus acid) vesicles cultivated in Vitro. M. S. University of Baroda.

Botany

1. Dasgupta, Aparna. Cytotaxonomical studies in some members of the tribe hibisceae and ureneae of the family malvaceae M. S. University of Baroda.

2. Gupta, Jagatnarayan. Growth performance and energy accumulation of *desmostachya bipinnata* (Linn) stapf. in grassland communities around Jhansi. Jiwaji University.

3. Jahagirdar, Hemant Anand. Cytogenetic studies in *foeniculum vulgare* mill. Nagpur University.

4. Mathur, Sunila. Studies on pectolytic and cellulolytic enzymes of two pathogenic isolates of *verticillium*. University of Udaipur.

5. Oomman, Cherukunnathu Indiculla. Embryological and taxonomical studies in the papilionaceae. Nagpur University.

6. Padoley, Shyamkant Kamlakant. Studies in ascomycetes: The biology, cytology and life cycle of some rare genera of phacidiales (discomycetes) from central India. Nagpur University.

7. Rawat, Manwar Singh. Morphogenic studies on some bryaceae part I: Patterns of differentiation in the protonema of *Bryum* Spp and *Leptobryum* part II: Reproductive cycle of *Leptobryum Pyriforme* in vitro. University of Delhi.

8. Sharma, Mahendra Kumar Shridhar. Ecological studies on *ishaemum ramosum* salisb. University of Udaipur.

9. Yawale, Nana Ramrao. Investigation of plant fossils from intertrappean series of India. Nagpur University.

Zoology

1. Anand, Kuljit Kaur. Effect of short photo period, blinding and molatonin treatment on the maturation of ovary of *Mystus tongara* (Hem.). Punjab Agricultural University.

2. Arbansjit Kaur. Morphological and histochemical studies on the vas deferens and its spermatozoa in the field rat (*Millardia moltada*). Punjab Agricultural University.

3. Bhopale, Kamleshwer. Studies on experimental infection of the ward tapeworm *hymenolepis Nana* in Swiss albino mice immune response and serum protein changes. Vikram University.

4. Jadhav, Madhukar Vasudeorao. A study on morphology and anatomy of a freshwater fish, *Channa Cachua* (Hamilton). Marathwada University.

5. Luther, Gurrula. Studies on the biology and fishery of some marine fishes of India. Andhra University.

6. Paul, Susanta Kumar. Comparative osteo-myological study of the Zizard fishes (familo—synodidae) from Visakhapatnam. Andhra University.

7. Raichuri, Nazeer Ahamed. Studies on the experimentally induced gastric ulcers and their prevention in forestomachotomized albino rats. Karnatak University.

8. Shahnoor, Shah Mohd. Studies on the acanthocephalan parasites of vertebrates. Osmania University.

9. Swarnakar, Radharaman. Cytological and histochemical investigation of some tissues of fresh water planarian, *dugesia*, indica. Jiwaji University.

10. Valamuri Raghukumar. Studies on certain endocrinological aspects of the pancreatic islets in the bandicoot *bandicota bengalensis*. Nagpur University.

Agriculture

1. Ajaib Singh. Studies on alternaria blight of rape and mustard crops and its control in the Punjab. Punjab Agricultural University.

2. Charan Singh. Carbon fertilization of sugarcane and maize crops through microbial respiration in field soil. Punjab Agricultural University.

3. Dodd, Nina Kanwar. Study of the effect of varieties and location on composition and cooking quality of chickpea. Andhra Pradesh Agricultural University.

4. Goverdhan Singh. Studies of the criteria for classification of irrigation waters with respects to soils of different texture. University of Udaipur.

5. Gurdeep Singh. Evaluation of heterosis and combining ability in two sets of *Gossypium Hirsutum* L. crosses. Punjab Agricultural University.

6. Gurvinder Singh. An analysis of some factors affecting genetic gain for egg production in chickens. Punjab Agricultural University.

7. Harwant Singh. Effect of soil water storage, kaolinite spray and mulching on barely. Punjab Agricultural University.

8. Malik, Naresndra Singh. Utilization of protected, groundnut proteins and 'Uromol' by ruminants. Punjab Agricultural University.

9. Misra, Ashok. Studies on anthracnose disease of jowar (*Surghum volgare* pers.) caused by *collectotrichum greminicolum* (Ces.) Wilson. University of Udaipur.

10. Mohinder Singh. Weed control studies in *Moong* *phaseolus aureus* roxb. Punjab Agricultural University.

11. Patel, Mulchandbhai Shivrambhai. Effect of soil manipulation on water and nitrogen economy in paddy on a loary sand. Punjab Agricultural University.

12. Paul, Jatinder. Utilization of alkali treated wheat straw based rations by goat. Punjab Agricultural University.

13. Pegatraju Ravindra. Effect of infestation by cotton jassids, *amrasca bigtulla*, *bigtulla ishida* on leading cultivars of cotton in Andhra Pradesh. Andhra Pradesh Agricultural University.

14. Raveendran, C. S. Chemical control of weeds in transplanted rice during third crops seasons. Kerala Agricultural University.

15. Saini, Ravinder Singh. Quantitative genetic studies within and between mutant populations of cereal crops. Punjab Agricultural University.

16. Surinder Kumar. Plant growth and uptake of boron and molybdenum as affected by potassium fertilization. Punjab Agricultural University.

17. Surinder Mohan. Zinc-copper interaction in crop nutrition. Punjab Agricultural University.

18. Surinder Singh. Milk production versus overall economic merit as the selection criterion for buffalo improvement Punjab Agricultural University.

19. Verma, Jagdish Prasad. Studies on the varietal susceptibility of sesamum against *antigastra catalaunalis duponchel* Lepidoptera : Pyralidae. University of Udaipur

Horticulture

1. Bhaskara Rao, Mandava Udaya. Studies on the comparative performance of different varieties of brinjal (*solanum melangenal*) at Tirupati. Andhra Pradesh Agricultural University.

2. Rana, Randheer Singh. Effect of some micronutrients on the growth, yield and quality of grape *Vitis vinifera* L. cultivar Thompson seedless. University of Udaipur.

3. Yogeswara Rao, Munagapati. Studies on the effect of moisture regimes, shade levels and growth regulators on fruit yield and quality of tomato (*Lycopersicon esculentum* mill). Andhra Pradesh Agricultural University.

Library System for Higher Education

(Contd. from Page 323)

one another to the great benefit of the clientele of all. A phased programme should be drawn up for the establishment of such a library system which is sure to go a long way in improving library facilities for the colleges and concomitantly in improving academic standards.

If higher education is to be lifted from being a mere exercise of preparation for passing examination without the more basic objectives of education being realised, it has to be made more library-centred than at present. If this is conceded, it is imperative that provision should be made for adequate library facilities to be available to students. T. H. Huxley, criticising the educational system in England a century ago said : "Students work to pass, not to know and nature takes its revenge ; they do pass and they don't know". It is doubtful if today, a century hence, we in India have moved far away from this position ; and one of the prominent contributory factors is that we have allowed library provision to remain a weak sector of our higher education especially in the colleges where the large majority of students are enrolled for education. A substantial improvement of the position is a matter that calls for the urgent attention of all concerned.

Examination Business

(Contd. from Page 325)

(g) The candidates' answer books be returned to them alongwith the result sheets so that they may know where they have faltered.

(h) Every script be evaluated by a board of examiners and not by single examiner.

(i) Experiments be made with objective type questions, short answer questions and single word questions alongwith essay type. The stress on purely memory questions should be reduced to the minimum.

In the end it may be worthwhile to mention that one should be sure of the objectives behind an examination paper/question. For instance while setting a examination paper in Geography one should be sure of what is expected of a candidate so that the degree of reliability and validity is sufficiently raised. The objective behind each question be identified clearly so that marking could be concretised.

Examinations should be meant mainly to guide pupil achievement. The attempt should be to find out what the candidate knows and not what he does not know. Examinations should cease to be a game of hide and seek. And if that is done the system can also easily be rid of all the unhealthy practices that have come to be associated with it.

CLASSIFIED ADVERTISEMENTS

S. N. D. T. WOMEN'S UNIVERSITY

1, Nathibai Thackersey Road,
Bombay 400 020.

Applications are invited on prescribed forms available from the University Office on payment of Rs. 5/- (by Money Order or in Cash) for the following posts to be filled in at the Women's Polytechnic of the University, located at its Juhu Campus. The medium of teaching will be English. Applications should reach the undersigned by June 27, 1977.

At least a Second Class Master's Degree in the subject concerned.

4. **Lecturer/Instructor for Costume Design & Dress Making:** At least a second class Master's Degree in Textile/Clothing/Dress Design or Diploma from a recognised institution with cutting/sewing/embroidery, preferable with 10 years' experience.

5. **Instructor in:** (a) Typewriting & Shorthand and (b) Clinical Pathology: (a) A Graduate with G. C. C. Certificate in Typing & Shorthand. A person having teaching experience will be pre-

Sr. No.	Particulars of Posts	No. of Posts
A. Head of Departments:		
(a)	Costume Design & Dress Making: (With specialization in Textiles/Clothing/Dress Designing/Fashion)	1
(b)	Food Technology	1
(c)	Pathology (M. D. Pathologist will be preferred)	1
B. Other Posts:		
1.	Lecturer in Pharmacy	2
2.	Lecturer in—Commerce Chemistry, English	1 in each
3.	Lecturer/Instructor in Costume, Design & Dress Making	1
4.	Instructor for Typewriting—Shorthand and Clinical Pathology	1 in each
5.	Accountant, Accounts Clerk, Librarian, Store-keeper	1 for each

QUALIFICATIONS:

1. HEADS OF DEPARTMENTS

(i) A first or second class Master's Degree in the subject concerned.

(ii) Either a Research Degree of the doctorate standard or an outstanding competence assessed from the review of published research carried out during the five years preceding the date of the application or the published literary or scientific work during the said period.

(iii) Teaching and/or administrative experience of about 7 years in an institution offering applied courses like those of a Polytechnic.

2. **Lecturer in Pharmacy:** At least a second class Master's degree in Pharmaceutics/Pharmacognosy. Persons with B. Pharma (II class) may be considered in scale No. 3.

3. **Lecturer in Commerce (Accountancy), Chemistry, English (linguistics):**

ferred. (b) B.Sc. with Microbiology/Chemistry and Diploma in Medical Laboratory Technology, preferably with some experience.

6. **Accountant:** B.Com. with Accountancy having 3-5 years experience. Qualification relaxable for experienced persons in which case appointment will be in lower grade.

7. **Accounts Clerk:** S. S. C. with Government Diploma in Accountancy.

8. **Librarian:** M. A. or M.Sc. II Class and Bachelor in Library Science or Graduate with a Diploma in Lib. Science.

9. **Store-keeper:** B.Sc. or Inter Science or Diploma in Pharmacy.

Note: (a) Other things being equal, preference will be given to candidates from Scheduled Caste/Scheduled Tribes/Backward Class communities. (b) Higher starting salary may be considered in exceptional cases.

SALARY SCALES as under with allowances extra

1. **Heads of Departments—Rs. 650-45-1100-50-1200**
2. **Lecturer in Pharmacy—Rs. 400-25-550-30-640-EB-30-820-40-940**
3. **Lecturer in other subjects—Rs. 300-20-460-EB-20-500-25-650-30-830**
4. **Instructor—Rs. 300-15-390-20-430-EB-550-25-575**
5. **Accountant—Rs. 260-10-280-15-430-OR Rs. 150-10-230-EB-10-270-15-300**
6. **Accounts Clerk—Rs. 115-4-135-5-160-EB-5-185-6-215**
7. **Librarian—Rs. 300-25-600-OR Rs. 160-10-250-EB-10-280-15-325**
8. **Store-keeper if B.Sc.—Rs. 130-5-150-8-190-EB-10-300**
If Int. Sc./Dip. in Pharm—Rs. 115-4-135-5-160-EB-5-185-6-215.

(Smt.) Kamalini H. Bhansali
REGISTRAR

SAMBALPUR UNIVERSITY
JYOTI VIHAR, BURLA
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dated 13-6-77

The Sambalpur University requires a Professor/Reader in Home Science to be appointed on contract basis. Persons in similar capacity may contact the undersigned stating complete Bio-data, Salary expected and other terms and conditions if any, latest by 10th July, 1977.

(G. P. Guru)
REGISTRAR

THE UNIVERSITY OF KASHMIR, SRINAGAR
NOTICE

Applications to reach the undersigned by or before 11.7.1977 are invited for the following posts:—

- (i) Professor of English in the pay scale of Rs. 1500-60-1740-80-1900
- (ii) Reader in Persian (temporary) in the pay scale of Rs. 1100-50-1300-75-1600.
- (iii) Lecturer in Urdu in the pay scale of 700-40-900-EB-40-1100-50-1300.

The applications for the above mentioned posts should be made in the prescribed form which can be had from the Registrar, University of Kashmir, Hazratbal, Srinagar-190006 on cash payment of Rs.6/- or by sending a crossed postal order drawn in favour of the Registrar, cashable at Srinagar post office along with a self addressed envelope (5" x 11") with the necessary postal stamps.

Details of the special and desirable qualifications prescribed for each post can be had from the office of the undersigned.

Sd/-
(Saif-ud-Din Soz)
REGISTRAR

UNIVERSITY OF COCHIN

No. Ad. A1. 10/73.

NOTIFICATION

Applications are invited from Engineers with not less than five years experience in the grade of Executive Engineers in building construction and below 60 years of age for appointment to the post of University Engineer in the scale of pay of Rs. 1150-1650 on contract basis for a period of one year in the first instance. The prescribed forms with further particulars can be had from the office of the Registrar, University of Cochin, Cochin Palace P. O., Tripunithura 682301 on payment of Rs. 2/- by Cash or Money Order specifying the purpose in the Money Order Coupon. If the purpose of remittance is not given in the Money Order Coupon, it will not be accepted. The receipt of remittance should be attached to the requisition for the forms.

REGISTRATION FEE: Rs. 25/- (Rs. 6.25 for SC/ST Candidates)

The candidates will have to appear for an interview at their own cost, if called for at the place which will be notified later.

The completed applications should reach the University Office on or before 7-7-1977.

REGISTRAR

TECHNICAL TEACHERS' TRAINING INSTITUTE, MADRAS-600020.

ADVERTISEMENT No. EI/1/77

Applications are invited in the prescribed form for the undermentioned posts from the qualified candidates.

1. PROFESSOR-IN-CHARGE OF EXTENSION CENTRE:

Scale of pay : Rs. 1500-60-1800

Qualification : Essential: Masters Degree in Engg./Technology of any recognised University in India or abroad.

2. Experience of not less than 15 years in teaching/industry of which atleast 5 years shall be in a teaching position of a rank not less than that of an Assistant Professor in an Engineering College/Teacher Training Institute or Head of Department in Polytechnics.

Desirable:

1. A Degree or Diploma or a Certificate in teacher education.

2. Experience in a responsible position in industry.

3. Experience in organising in-service training programmes for teachers.

Age: 35 to 48 years.

The post is required to be filled up in Extension Centre at Hyderabad and is liable for transfer either to Headquarters at Madras or other Extension Centres in the Southern Region.

2. Sergeant:

Scale of Pay: Rs. 330-10-380-EB-12-500-EB-15-560.

Qualifications: Essential: 1. A Pass in S. S. L. C. with 5 years experience as Sergeant in any Educational Institution or in watch and ward work of an Institute/undertaking, with proven integrity.

2. A good physique.

Desirable: Ex-serviceman with good record.

AGE: Below 35 years (relaxable in the case of Ex-servicemen).

Application form and other details can be had from the Principal of the Institute on requisition with a self-addressed envelope (23 x 9 cms) duly affixed postage stamps of the value of 40 Paise. Applications completed in the prescribed form should reach the Principal on or before 1.7.1977.

PRINCIPAL

Govind Ballabh Pant University of Agriculture & Technology.
Pantnagar, Distt. Nainital
Pin-Code No. 263145

Admission Notice 1977-78

Applications are invited by 30th June, 1977 for admission to the following degree programmes on prescribed form obtainable from the Registrar, alongwith other details by sending a crossed Indian Postal Order of Rs. 5.00 payable to the COMPTROLLER of this University or in cash at Comptroller's office accompanied by a self addressed envelope (28 x 13 cm.) bearing postage stamps worth Re. 1/- Name of the degree programme for which the form is required should be clearly written on the envelope. Separate applications are required for each programme.

POST-GRADUATE PROGRAMMES

1. Ph.D.

1. Agronomy 2. Agricultural Economics 3. Plant Breeding 4. Plant Pathology 5. Soil Science 6. Animal Breeding 7. Animal Physiology 8. Vety. Pathology 9. Vety. Anatomy 10. Biochemistry 11. Animal Nutrition 12. Vety. Parasitology 13. Vety. Microbiology & Public Health 14. Horticulture 15. Agril. Engineering.

2. M.Sc. Agriculture

1. Agronomy 2. Agricultural Economics 3. Entomology 4. Horticulture 5. Plant Breeding 6. Plant Pathology 7. Soil Science 8. Animal Breeding 9. Animal Nutrition 10. Dairy Husbandry 11. Poultry Husbandry 12. Biochemistry 13. Microbiology 14. Rural Banking & Agril. Economics.

3. M.V.Sc.

1. Vety. Anatomy 2. Vety. Bacteriology 3. Vety. Pathology 4. Vety. Hygiene & Public Health 5. Vety. Physiology 6. Vety. Pharmacology 7. Vety. Gynaecology & Obstetrics 8. Vety. Parasitology 9. Vety. Medicine 10. Vety. Surgery 11. Animal Breeding 12. Animal Nutrition 13. Dairy Husbandry 14. Poultry Husbandry 15. Biochemistry.

4. M.Tech. (Civil Engineering)

1. Structural Engineering with specialisation in concrete structures, steel structures and Design of storage structures. 2. Hydraulic Engineering with specialisation in Hydraulic Engineering and Hydraulic Structures.

5. M.Tech. (Agril. Engineering)

1. Farm Machinery & Power 2. Irrigation & Drainage 3. Soil & Water Conservation 4. Process Engineering. 6. M.Sc.

1. Physics 2. Mathematics 3. Biochemistry 4. Microbiology 5. Plant Physiology 6. Food Technology

7. M.Sc. (Home Science)

1. Foods & Nutrition

UNDERGRADUATE PROGRAMME

College of Agriculture : B.Sc. Agriculture & Animal Husbandry

College of Vety. Science ; B. V. Sc. & Animal Husbandry

College of Technology : B. Tech (Agril./Civil/Elect./Mech. Engg.)

College of Home Science B.Sc. (Home Science) Diploma in Home Science

Eligibility qualifications and other requirements for admission to various programmes will be supplied with the application form. Admissions are made strictly on merit.

Medium of Instruction

The medium of instruction for BSc. Ag. & A. H. and B. V. Sc. & A. H. is Hind (however, one section with English medium in each of these programmes will also be provided), bilingual for Home Science, and English for the rest of the programmes.

Some Special Features

1. A residential University with integrated approach to teaching, research and extension 2. Emphasis on practical training 3. Student advisory system 4. Placement service 5. 220 net instructional days per session 6. Liberal financial assistance including supply of text-books on half price, part time employment as Graduate Assistants @ Rs. 250/- & Rs. 200/- per month for a large number of Post Graduate Students, fellowships and Scholarship etc., five U. G. C. fellowships of Rs. 400/- p.m. to M. Tech. Structural Engineering candidates and Ford Foundation fellowships of Rs. 400/- p.m. to the candidates admitted to Ph.D. in Agril. Economics may also be available. 7. Most sophisticated and upto-date equipments including a computer centre, and above all, 8. Very high standard of academic performance and discipline. Only such candidates should seek admission to the University who believe in hard work and good conduct.

2. The University reserves the right to discount while determining their comparative merit for admission, the percentage of marks to the extent deemed proper, obtained by the candidates from the Boards of Intermediate / Higher Secondary Education or Universities in cases where the University feels that the percentage of marks awarded by such Boards or Universities do not reflect the true merit of the candidates.

3. Admissions are also likely to be made in the second trimester beginning November 1977 for candidates whose results are not declared by the time the admissions are finalized in the first trimester beginning July 1977 subject to the availability of seats.

(O. S. Misra)
REGISTRAR

ADDITIONS TO A.I.U. LIBRARY

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MANAGEMENT OF EXAMINATIONS

by

AMRIK SINGH

and

H. S. SINGHA

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University news

A CHRONICLE OF HIGHER EDUCATION & RESEARCH JULY 16, 1977 80 PAISE



Union Education Minister, Dr. P.C. Chunder, at the meeting of the Standing Committee of the AIU held in New Delhi recently. Seated on his right are Dr. S.M. Singh 'Suman', President, AIU and Dr Satish Chandra, Chairman, UGC.

**INDIAN INSTITUTE OF
TECHNOLOGY, KANPUR
KANPUR-208016**

Advertisement No. 15/77

Applications are invited for the posts of Professors, Assistant Professors and Lecturers in the three departments of the Institute in the following pay scales:

Professor	: Rs. 1500-60-1800- 100-2000-125/2-2500
Assistant Professor	: Rs. 1200-50-1300- 60-1900
Lecturer	: Rs 700-40-1100-50- 1600

The departments are seeking individuals with ability and aptitude for teaching in undergraduate/postgraduate programme, research and development in any of the areas of specialization listed under each. The number of positions available in each of the departments are also indicated below :

1. Department of Aeronautical Engineering :

- (a) Aerodynamics (preferably flight mechanics/Aircraft design)
- (b) Propulsion (preferably in Gas-turbines/Rocket propulsion)
- (c) Structures (preferably in Random Vibrations)

Number of positions: **Two** (likely to be three)

2. Department of Mechanical Engineering :

- (a) Manufacturing Science
- (b) Design
- (c) Automatic Controls
- (d) Solid Mechanics
- (e) Fluid Mechanics
- (f) Thermal Science.

Number of positions : **Seven** (likely to be ten)

3. Department of Chemistry:

- (a) Inorganic Chemistry
- (b) Nuclear Chemistry
- (c) Organic Chemistry
- (d) Physical Chemistry

Qualifications for Positions in Aeronautical and Mechanical Engg. Departments

Doctorate degree with good academic record and at least eight years of professional experience of good quality outside the work for the degrees

OR

M.Tech. degree with good academic record and at least fifteen years of industrial experience with brilliant record outside the work for the degrees.

The candidates must have demonstrated ability of independence in teaching and research with significant contribution in the area of specialization evinced by the adequate number of research publications of good quality in journals of repute and/or developmental project reports of equivalent merit.

Assistant Professor

Doctorate degree with good academic record and at least three years of

professional experience outside the work for degrees.

OR

M.Tech. with good academic record and at least seven years of industrial experience outside the work for degrees.

The candidates must have potential for independence in teaching and independent research work as demonstrated by adequate number of publications of good quality in journals of repute outside the candidate's own thesis, or equivalent development work done.

Lecturer:

Doctorate degree with a good academic record and adequate research/development experience resulting in research papers of good quality.

OR

M.Tech. with good academic record and at least three years of teaching, research/industrial experience with good record outside the work done for degrees.

Desirable Qualifications:

Basic degree in Engineering/Technology for all positions.

Qualifications for Positions in the Department of Chemistry

Professor :

Doctorate degree with good academic record and at least eight years of professional experience of good quality outside the work for the degree.

The candidates must have demonstrated ability of independence in teaching and research with significant contribution in the area of specialization evinced by the adequate number of research publications of good quality in journals of repute and/or developmental project reports of equivalent merit.

Assistant Professor:

Doctorate degree with good academic record and at least three years of professional experience outside the work for degrees.

The candidates must have potential for independence in teaching and independent research work as demonstrated by adequate number of publications of good quality in journals of repute outside the candidate's own thesis, or equivalent development work done.

Lecturer:

Doctorate degree with a good academic record and adequate research experience resulting in research papers of good quality.

Desirable Qualifications

Master's degree in Chemistry for all positions.

The Indian Institute of Technology, Kanpur has well equipped laboratories and central facilities. The institute has a large computer centre with IBM 7044, IBM 1401, IBM 1800, PDP-1 systems with interactive graphic terminals and

TDC-316 and a group of experienced programmers. The Institute has a well stacked library with more than 150,000 volumes and 1,300 periodicals. The central facilities include 2MV Van de Graaff accelerator, 4096 multi-channel analyser and other radiation detection equipment, liquid nitrogen and liquid helium plants, NMR, EPR, Mass Spectrometer, X-ray plant, UV and IR spectrometers, glass blowing shop, crystal growth facility, central instrumentation laboratory, precision machine shop, electron microscope besides a large workshop for fabrication of specialised research apparatus.

There is an Advanced Centre for Electronic Systems at the Institute. The Centre has been sponsored by the Ministry of Defence to carry out training and unclassified research and development work in the areas of communication and radar. Besides, an Advanced Centre for Materials Science has been established recently at the Institute by the Government of India to undertake research in the frontiers of development on materials of national importance.

The campus facilities include a Primary and Higher Secondary School, a Health Centre and Shopping Centre.

Posts are permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or GPF-cum-Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year, the appointment will be on probation. Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

In the category of Lecturer, one post in each of the Departments will be reserved for SC/ST candidates. In the event of non-availability of suitable SC/ST candidates, the reserved posts would be treated as dereserved.

Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self-addressed unstamped envelope of 25 cm x 10 cm size. Applications should be accompanied by a postal order for Rs. 7.50 (1.87 for SC/ST candidates).

Applicants from abroad may apply on plain paper enclosing a complete bio-data and names of three referees from whom reference letters may be obtained.

Applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016 (India) on or before 30th July, 1977.

UNIVERSITY NEWS

AIU for reconsideration of Sen's recommendations

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The Standing Committee of the Association of Indian Universities has called for reconsideration of certain conditions attached to the revised scales of pay introduced by the UGC for university and college teachers four years ago. While general guidelines in respect of hours of work and allied matters had been indicated in the report of the Sen Committee, the matter had not been concretised in terms of lectures, laboratory work, contact hours, extra-curricular activities and such other matters. This had led to a certain amount of avoidable wrangling in more than one university. The issue therefore required to be attended to on an urgent basis at the national level.

Furthermore, the Committee also wanted reconsideration of the present decision not to pay remuneration to teachers for examination and invigilation. A number of complications had arisen since this step was taken. This has had an adverse effect on the conduct of examinations.

Yet another matter in regard to which there was lack of clarity was the code of conduct for teachers about which the Sen Committee had made certain broad suggestions. Several universities had prepared such codes of conduct. In certain other cases the State Governments had formulated certain guidelines but these were not found acceptable by teachers. In a couple of cases it had also led to legal complications. A code of conduct by definition has moral and social sanction behind it rather than legal force. It is important therefore to involve teachers as well as educationists in the formulation of such a code. Above all, it is necessary to have a code which is common to all the universities, especially in matters governing the ethics of teaching and inter-personal relationship with students and colleagues. However it needs to be emphasised that a code of conduct is different from service conditions. Hours of work and such other matters, for instance, come more under the category of service conditions than a code of conduct.

The Committee also proposed that provision should be made in every university in regard to assessment of output, consistency and quality of work and intellectual growth in respect of every single teacher, including University Professors. The Committee suggested that in future all University Professors should be appointed on a tenure basis for a period of five years, the contract being renewable subject to assessment of the work done by the Professor concerned.

The Committee also considered the question of the constitution of Students Unions. It felt that to draw up a model constitution would not be a very feasible proposition. Universities had different practices in this regard and it might not be so easy to bring them into line with one another. There were two principles however which must be affirmed to be of paramount importance and every university should seek to ensure that whatever be the details of the constitution drawn up for the students union, the following guidelines be observed:

(i) Membership of the union should be optional. Those who wish to join may join and those who do not wish to join should not be obliged to join.

(ii) While elections are an important part of any system of representation, recourse to other modes of selection such as rotation, ex-officio membership and nomination in certain cases may be taken, as and when called for.

The Committee took serious note of some of the recent happenings on the campuses. Instances were brought to its notice where intimidation had been used to get certain decisions taken and/or altered. This had resulted in serious impairment and disruption of academic

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Editor : ANJNI KUMAR

Role of Universities in Integrated Rural Development

R. C. Hiremath*

The regeneration of our rural society dependent heavily on agriculture has been the cherished goal of our national economic policy. In fact, the World Bank and many other development agencies interested in rural development, have extended their hands of cooperation with a view to encourage the national governments to intensify the development programmes for the rural masses, which constitute a major segment of the population in almost all developing countries. In India, most of the rural masses being dependent on agriculture, it is but natural that the national government spends a good deal of public funds on the development of agriculture, and the development of agro-based industries, in rural areas. It is not for me to say that the rural population suffers from inadequacy of all sorts and as a consequence lives at the lowest levels of living. Our village community life in the past was a model of stability, continuity and prosperity; and the glories of this rich and cultural life was sung in no uncertain terms by the eminent historians. But, unfortunately, continuous foreign invasions and the ultimate domination of the British, not only gave a death-bell to the self-reliant and viable community life in India, but also pushed back the economy to the level of stagnation and decay.

Soon after the attainment of political independence, the desire to transfer stagnant economy with diversities of culture, language and resources into a self-generating and self-sustaining economy became intense, and the same intensity found its expression in a series of 5-Year Plans initiated in early 1950's. It is heartening to note that we have made tremendous progress in almost all aspects of our economy and especially in industry, agriculture, transport and education and social welfare. In agriculture, we have experienced phenomenal change—both in qualitative and quantitative terms. In industry too our progress is phenomenal; our achievements in electronics and other mechanical gadgets are really a major landmark in the industrial progress of our country. Indeed, the degree of sophistication and diversification in production technology which India has achieved in recent years could stand comparison with their counterparts anywhere in the world. The same could be argued with regard to the progress in education, communication and social welfare etc. and other equally important areas.

But on reflection, when we turn from Macro to micro-level, we do not get very promising picture. For example, the GNP, per capita income, con-

sumption standards, per capita availability of food-grains, longevity etc. have gone up. But distance between the man and man has increased; inequality of income has become more pronounced and a sense of frustration and isolation has been writ large on the faces of rural masses.

Any strategy for economic development of India must concentrate on all round development of India's six lakh villages, where India's 80% population lives in abject poverty. It is also unrealistic to hope to achieve all round economic development unless we try to pass on benefits of development to the rural poor; and encourage them to be a willing partner of the national reconstruction process. The new strategy for rural development will involve an application of science and technology so as to raise the production and productivity of small and marginal farmers and thereby enlarging avenues of gainful employment opportunities. Naturally this will lead to diversification of rural occupations and at the same time help raise the living standards of the rural community.

A provision of Rs. 15 crores was made in the last year's budget for various programmes for rural development based on the scientific use of locally available resources—human, animal, plant, soil, water, minerals etc. The new programme differs from the earlier programmes in more ways than one. Not only does it provide the missing links in the form of action plan for the scientific use of resources, the introduction of science and technology for the optimum use of land and involvement of scientific institutions and youth organizations, but also it involves several non-official organisations including the Federation of Indian Chambers of Commerce & Industry and Associated Chamber of Commerce & Industry.

It is really heartening to observe that the captains of Industry have, for the first time, involved themselves in the process of rural development by adopting villages, forming consortia of companies in specific areas, increasing productivity per hectare through assistance rendered to individuals and associations, helping agro-centres, starting labour-intensive industries in rural areas, where surplus manpower and other inputs are easily available.

What is the role of University in such a challenging programme of rural development and in what way the university could contribute to the task of rural enrichment? I would like to add some more meaning to the concept of rural development. In most cases we seem to use the concepts of rural development and agricultural development interchangeably. In fact, the concept of rural development is more broader, and is and should be generally conceived of as a multi-sectoral activity which includes, besides agricultural development and rural industry, the establishment of social overheads such as schools, health clinics, roads communications, protective water supply, disease control, improved nutrition, adult literacy and welfare programmes, and the last but not the least is Family Planning.

At present it seems that some of the rural deve-

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development programmes are "selective" in the sense that they cover a particular activity like minor irrigation, bunding, cattle breeding, health, education or Family Planning. There is hardly any attempt made to 'integrate' these activities. I, therefore, feel it desirable to emphasise that the rural development is an integrated multi-sectoral activity which includes the development of agriculture and social overhead facilities needed for the rural community. The second reason as to why the distinction between the rural development and agricultural development is warranted is because of the fact that the latter is associated with the growth of productivity and agricultural output, while the former is conceived in terms of enrichment of the material and social welfare of rural population—especially rural poor and landless agricultural labourers.

In recent years, we have witnessed a phenomenal growth of cooperative societies—especially in the field of agriculture. The total agricultural credit disbursed by cooperatives has increased from Rs. 30 crores in 1950-51 to Rs. 950 crores in 1973-74. Though this is a commendable record of progress, the fact remains that the cooperative credit tended to flow predominantly in favour of the rural rich as compared to the weaker sections of the society. This is mostly because of the development of the vested interests within the cooperative sector who try to monopolise most of the benefits accruing from the cooperative movement. Secondly, the dice are also landed in favour of the rural rich, because it is they who have the required resistance capacity whenever natural or environmental calamities take place. Thus in order to make the weak in rural society to withstand some of these failures, it is necessary to evolve a new strategy that can ensure at least the minimum income. I venture to suggest that the University departments can evolve suitable technology suited to local conditions and suggest appropriate cropping pattern. In the application of such newly evolved technology the emphasis ought to be on the use of available local resources. The application of this technology should assure at least the minimum income required to withstand environmental limitations for which he is exposed very often.

It is not only in the field of cooperative credit that the so called 'ruralelite' had the major share but also in almost all developmental programmes implemented through various Five-Year Plans. Realising that the weaker sections of the society remained as they were before, various programmes like Minimum Needs Programme, SFDA, MFAL, DPAP, Nutrition programme etc. which were specially meant for rural weak, were taken up in the Fourth and Fifth Plans, and I am sure that these programmes would contribute a good deal to the rural development.

Coming to the role of education and particularly university education, the present trend stands for strengthening and perpetuation of the *status quo* i.e. continuing the pursuit of knowledge, excellence and development of skilled personnel. But I feel that the

universities can play a more dynamic role apart from the traditional ones by moving closer to life and addressing themselves to an intensive programme of rural reconstruction, and this could be initiated by the formation of brain trust of students and staff drawn from different faculties to plan, direct and participate in the progressive measures undertaken for rural progress. They can assist various Government agencies in the implementation of plan and non-plan schemes besides directly assisting the villagers in improving the roads, better the hygienic condition and farm operations. Service to the community being the major objective, the university will have to undertake various indepth studies of its surrounding region in all its aspects through its various departments and institutions. I am sure that each department of the university can make its own unique contribution to the programme which could include agricultural development, organisation of local industries, development of improved health delivery system, and educational services, conduct of non-formal education for out-of-school youth and so on. It is high time that Social Service be included as an integral part of our syllabi for various degree courses.

The use of students power in the national reconstruction is another important programme which all universities must try to develop. The present youths seem to suffer from a sense of isolation. They have no identity and have no peer-group to inspire and involve in constructive and asset-creating activities. The universities have to devote more time and energy for youth development programme, which should aim at the creation of enlightened and committed leadership needed for social developments.

I may also mention that university may function as a link between local community and development financing agencies, so that the transfer of science and simple technology to the rural masses be smooth and easy. For example scientific knowledge in plant breeding will ensure the development of drought resistant character of crops that could be introduced in areas where rainfall is not sure. I am confident that active participation of universities in such programmes will surely help secure the most favourable results that are necessary for changing rural environment.

A programme for the education of out-of-school youth in the age-group 14-21 years by the university students has a special significance in a poor country like ours. Investment in education is necessarily long-term and begins to yield results after a longer period. Developing countries like ours are hard pressed for time and resources, and hence the need for finding out such educational programmes which can yield quick results. Several programmes such as adult literacy on-the-job-training of industrial workers, agricultural extension and so on. But, of all these, probably the most significant and far reaching would be a crash programme for the education of young persons in the age-group of 14-21 which account for about 20% of the total population. A large percentage of population in this age-group is generally, alert, inquisitive, impressionable and capable of being

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Concept and Significance of a Rural Varsity

G. Ramachandran*

The first thing to remember is that the Rural University will be a University. The adjective 'Rural' will not make it less than a University. Nor will it necessarily make it anything much more than a University. The Rural University will have quite a number of features common to Universities. It would be appropriate however, to say that it would be a University with a difference. It would be a somewhat different type of a University. I shall indicate where the difference would be. Let us go on step by step. Can we not all agree that a Rural University must be located in a rural area? For, one of the special features of a Rural University would naturally be its close association with as many villages around as possible. The setting must be rural because you cannot have a Rural University in big cities like Bombay or Delhi or Calcutta. It is not, however, difficult to conceive of an Urban type University located in a rural area. Thus, location alone will not make a University a Rural University. We can have a big Industrial plant located in a rural area but that will not make it a rural industry. It would simply be a very big industry in a rural area with certain facilities which the rural area alone can furnish including cheap labour. But a rural industry will be something inside the rural area which village people can understand and handle, making use of local raw materials to produce finished articles needed by the people and thus giving themselves of gainful employment. This would be a fairly apt definition of a rural industry. This need not mean ruling out the use of power. We can have village industries producing better articles more efficiently and priced cheaper through the use of power in villages. If we organise a number of cottage and village industries in a rural area in an integrated manner, we get a rural industries complex functioning for the rural people to get employment, wages and consumer articles they need.

We can follow this line of thinking in regard to a Rural University. First, it is located in a rural area. Even while the teaching and learning of several subjects as in other Universities go on, these will be oriented to look at the realities in the village and deal with the problems arising from them. We want the rural areas to be cleaner, more prosperous and more enlightened and educated. We want rural life to be better organised through local bodies. We want to bring more happiness to the men, women and children in the rural areas. We want to bring elementary scientific knowledge to the people. Our aim is thus integrated rural development. A Rural University must become the instrument in diverse ways to achieve integrated rural development.

It is impossible anymore for University education

in India to sit in ivory towers. University education needs to be linked with the daily life of the people who are in the grip of poverty, malnutrition, ill health, ignorance of elementary science, in superstitions of every kind and in frustration and growing anger. If higher education will not go out of the classrooms to help the people, a day will come when the people will care little for such education and may even turn against it. Universities have created a gulf between the educated few and the uneducated many. In spite of several current well intentioned schemes to bridge this gulf, it keeps on widening and threatening. The educated few turn their backs on the village and hanker more and more after urban life and urban employment which, alas, is nearly reaching the saturation point. The aim of every boy and girl coming out of the universities today is a white collar job. This is true even of agricultural, engineering, technical and science colleges and institutes. We need a revolution inside the classroom and equally outside in the life of the people. The call for non-formal education is now rising into a crescendo. The actual problems and challenges in the life of the people must find echoes inside where teaching and learning are going on to find answers and solutions. These answers and solutions will have then to be tested outside in projects of practical work among the people. Extension comes into the picture at this stage with overwhelming importance. It is at this point again that problem oriented research also comes in with equal importance. Research and extension must cross-fertilise each other all the times. Such research and extension and sound and scientific academic knowledge become the foundation of a Rural University.

We hear it repeated by everyone from every side that the rural community in India even today comes to nearly 80% of the total population. Having mentioned this fact with gusto, we go on doing things as though the 20% in the towns and cities were more important than the 80% in the rural areas. The result is the double evil of ignorance and unemployment which is eating into the vitals of rural India. Unemployment and ignorance are first cousins. These two evils will have to be attacked simultaneously. Illiterate and ignorant people will not forge employment and unemployment feeds ignorance. The Rural University will have to attack ignorance and unemployment through every programme of study and extension. That is why it is imperative that academic studies should turn in the direction of the realities in the life of the rural people and extends on become the link between knowledge and those realities. Without establishing this link no Rural University will justify itself.

For a university the instrument of change can only be knowledge. This is true of Urban and Rural Universities. Both must inculcate knowledge. The area of knowledge is naturally unlimited. The Rural University may not aim at the acquisition and spreading of every kind of knowledge. Even an Urban University cannot work on a limitless canvas. We, therefore find universities picking and choosing their courses of studies and their areas of specialisation. The

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Rural University will also do the same. It will pick and choose subjects of study closely relevant to integrated rural development. Let us now therefore understand something of the meaning of integrated rural development. Adequate and nourishing food, clothing, housing, sanitation and health, universal literacy, elementary scientific knowledge and a working knowledge of social sciences and organisations are the challenges in the area of rural higher education. The Rural University will therefore study these matters in the classrooms. What then will be the difference between these studies in the Rural University and the Urban University? Let me give one or two examples. Let us take the study of economics. In the Rural University we shall stress far more rural economics i.e. the economics of agriculture and agro-industries than the economics of big industrialisation. The Khadi and Village Industries Commission of India, a statutory Commission set up by the Parliament, has undertaken through the years much research in Village Industries as also much study of rural economics. The Commission produces articles through modernised rural industries worth about Rs. 200 crores and gives employment to more than two million people. No university has taken any interest in the ideals and work of the Commission. The Rural University on the other hand will establish close relations with this Commission, both in the area of theory and the area of practicals. Let us take another example, that of rural sanitation. We will find at once that rural sanitation is not identical with urban sanitation. Instead of flush latrines as in the cities, we shall have to organise trench latrines to conserve valuable manure. The composting of manure will mean both sanitation and the fertilisation of the soil at the same time. In the field of nutrition also hand-pounded rice and chakki-pressed oil will become matters of greater importance than the establishment of rice and oil mills. These economic measures cannot hang in the air without the theory of certain economic values standing behind them. The Rural University will take cognizance of these theories and practicals. Thus knowledge itself will have to become rural oriented and the instrument of rural development.

Literature and Fine Arts will certainly be in the Rural University. Villagers will need poetry and music and dance and painting even more than the urban people to whom many other recreations will be available. There is in our country a vast treasure of folklore and folk arts lying buried under the debris of centuries. Research and study in this area will be right inside the teaching and learning programme of the Rural University. Even as it is, there is widespread interest in folklore and folk arts. Some specialised agencies are now taking care of these treasures in our historic culture. The Rural University will give more care and attention than ever before to them.

I have covered fairly wide ground in this brief study of the concept and significance of a Rural University. There is much more to say on the subject but what I have said will, I hope, provoke further thinking on the subject. As I have pointed out it will not be easy to achieve the fullness of integrated

rural development because this will mean touching rural life at every point and rejuvenating each one of them. We will love the villages and serve them but we do not want them to remain in the old ruts. We want to improve production, spread knowledge and raise the standards of life of the people. Education alone can become the mighty lever to shift the villages from the past into the future. It would be totally wrong to create any conflict between the vital interests of rural and urban India. In the words of the great English Sociologist, Patrick Geddes, the revolution we need is the true marriage between the village and the town. Each has something to contribute and to enrich each other. The Rural University will sort out the problems and challenges of this grand alliance to make the villages prosperous, progressive and happy. This aim is total and massive but without achieving it there is no future for our people. □

Role of Universities in Integrated Rural Development

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inspired by emotional commitments to the service of the people and the country. It is, therefore, quite rewarding to undertake this massive programme for the education of this age-group, by the Universities in the region.

When, once we assign this role for the universities, the details like how to involve teachers and students, what should be the content and character of the programme, the organisational problems related to this programme pose no problem and can be solved through discussions and seminars. What is important is the need for change in the attitudes of teachers and student and willing acceptance of challenges opened up by the programme which is need-based. To some extent we are already doing such a job through our extension services, but such programmes have to be given a big push with clarity of thought and a sense of purpose in order to speed up the tempo of economic development.

The advantages of such a programme are immense: (1) university students would not be easily led away by the political parties and would be able to take a detached view of the problems in question; (2) their energies would be diverted into constructive channels of social service and national development. These gains are so important that any effort to obtain them would be worthwhile and fully justified. I may recall the contributions of educational institutions established and encouraged by Mahatma Gandhi. They trained a large and committed band of freedom fighters who played no small part in winning independence for the country. Today the situation is similar though somewhat different. We have to wage a more difficult and relentless job against mass poverty, ill-health etc. The universities have to accept this challenge and do their bit for the welfare of the masses by moving closer to masses and if they do so they would not only justify their existence but also the enormous investment that has gone into them. □

Bombay's effort to link jobs with courses

(From our special correspondent)

Bombay University has made use of the switch-over from the old pattern of two-year degree course to the three-year course, to restructure the syllabi as called upon by the UGC, to make them "relevant to the rural environment and to the developmental needs of the community."

The university authorities kept in mind its twin roles of being a metropolitan centre of higher education and also a caterer of rural students in Thane, Kulaba and Ratnagiri districts, while restructuring the courses.

Although the university followed the UGC guidelines and its specific directive that "restructuring of courses should not be either mixed up or linked with the introduction of job-oriented courses," some syllabi have a definite advantage of giving the degree-holder confidence and

activities by Bombay collegians for the past five years, has been selected as the "rural laboratory" for the study of this subject.

Another unique feature of the new courses is their inter-disciplinary character. Students of B.A. can now study some science and commerce subjects. Students of science can learn law, economics, psychology and subjects under the commerce faculty. Commerce students also can learn law, humanities, and a science subject—mathematical and statistical techniques.

The restructuring of the commerce degree course has a bigger magnitude than the other two. The course in commerce has been drawing ever-increasing number of students in the university and a proposal to reorient the old course to the requirements of the city commercial job market,

the degree-holder is expected to participate meaningfully in the work of any export organisation or export-oriented industry. The study involves taking up five actual cases, besides lectures and tutorials. The syllabus for marketing research and regulation of trade practices also aims at practical knowledge and improvement of skills.

The introduction of 'advertising' and 'business communication,' two new subjects, aims at equipping a commerce graduate with necessary skill and knowledge to play his role in the field of mass communications allied with the business world.

Side by side their introduction, a paper in English is also being introduced for the B.Com. student to give him adequate language skill.

A new subject which can be taken up by students of not only B. Com., but also B.A. and B.Sc. is 'actuarial science'. The five papers in the subject are designed to cover a course of studies comparable to that of the intermediate examination of the Institute of Actuaries, London, with the omission of economic background to finance and investment. Only those who have studied mathematics and statistics at the higher secondary level can take up this subject.

While there is a compulsory paper in business law for commerce students, they can also opt for a five-paper course in law to study laws relating to public control of business, socio-economic laws, labour laws, taxation law and company and cooperative laws. Commerce graduates are thus poised to start well on a legal career after a degree in law.

The introduction of law both in the commerce and arts faculties is another attempt to make the degree courses inter-disciplinary and profession-oriented.

Although the syllabi for some of the subjects to be studied in the third year B.Sc. have not been drawn up, there are many new fields thrown open to the students. Science communication (journalism, radio and television), food production, energy utilisation,

CAMPUS NEWS

competence in facing the job market.

The syllabi are being implemented from this academic year. Students who join their degree courses this year can take up a study of rural development in five papers common to the arts, commerce and science faculties. Claimed to be first of its kind in India, the course in rural development, is optional. Dr. B.M. Udgaonkar, member of the UGC, recently described the introduction of this subject, "revolutionary".

The university held an orientation programme for 11 teachers from its constituent colleges to help introduce the subject in the first-year degree curriculum itself. Aswali, an adivasi village, which has been a hot-bed of social service

made five years ago, could now be taken up along with the restructuring.

All the same, the commerce degree course encompasses a study of "rural environment" like community development, panchayati raj and farm management including financing.

For the city-oriented students, four new subjects are available. The subject, "export management," is already a hot favourite of those who joined the B. Com. degree course on June 16, when the colleges reopened.

The other three new subjects are 'marketing research,' 'the regulation of trade practices' and 'advertising.' The syllabus lays down that on completion of a study of the export management,

marine science, computer science, computer programming, waste recycling, environmental science, agrochemicals, fishery biology and sample survey techniques are some of them.

Two unique subjects meant for science students for their second year study are elements of social and economic life in India and history of civilization and the history, methodology and philosophy of science including a study of ancient and modern Indian scientific development. These two compulsory subjects will save the science student from being blind to the values of life and alien to the benefits of liberal thought and social consciousness.

Besides, a science student can also opt for any of the non-science subjects—psychology, geography, economics, actuarial science or rural development. But what marks out the science course is its integrated approach towards the study of life sciences. After five years from now botany and zoology will not be taught as separate subjects but under a common head, “life sciences.” This integrated subject is offered for the first year students’ option for the current session. In the science faculty, the university proposes to introduce the unit system and will examine the possibility of introduction of semester system. The syllabi are drawn up accordingly.

In drawing up syllabi for language courses, especially in English, for B.A., the university has shown greater originality and imagination. The compulsory study of English by B.A. students will now involve acquiring communication skills. One paper is totally designed to help the student acquire writing and speaking ability and help him in reading and listening comprehension. Included in the syllabus are recognition of different styles, deduction of meaning from truncated passages, telegraphese and newspaper headlines, interpretation of materials like railway timetables, application form questionnaire, comprehension of the tone of different passages, the writer’s point of view, learning the word and sentence stress, intonation, note-taking from lectures and

note-making from books, factual, persuasive, informal, official, semi-official, and personal writings, speaking in different capacities, making inquiries at counters or over telephones, interviews, conversation and use of various reference materials. Besides these communication and reference skills, a student is also made to acquire some literary sensibility through a study of three texts of prose, poetry and drama. While studying English as a special course, the student has to delve deep into the major ideas and events which led to the formation of the intellectual climate of the literary age. The university has now adopted an age-wise study of English literature giving up its past method of genre-wise study. New options are also offered to students of English literature: linguistics, aesthetics, methodology in literary appreciation, comparative literature or Indian writing in English.

Among various proposals now before the academic council are a one-year diploma course in the teaching of English, a short-term course in conversational English, a course in remedial English, a course in speed-reading, a course in elementary English for adults, and a course in creative writing in English. Diploma courses in Marathi also have been suggested for the approval of the council.

Another measure by the university which has been warmly welcomed, is its offer to those who have not studied Sanskrit earlier, of a course in Sanskrit as a fresh language like Russian, Japanese or Chinese at the B.A. level.

A compulsory paper in Sanskrit will give these freshers a knowledge of grammar taught as it arises from the text, an acquaintance with idioms and short sentences, and an understanding of the fourth act of Bhasa’s classical play, “Swapnavasavadatta,” and some modern writings.

In designing other courses in Sanskrit, there is a definite effort to make the study of the subject multi-faceted and useful in various ways. The five paper-course which can be taken up by both the freshers and those who have some groundwork in the language, is not totally literature-oriented. The

course provides for a study of drama, poetry, poetics, philosophy, ancient polity and culture and the history of classical literature, while the eight-paper course, includes, besides the topics under the five papers, a study of vedic literature, vyakarana and composition and epics and Geeta.

Under the revised scheme and syllabus of Ancient Indian culture, which has been a popular course of Bombay University, India’s cultural, social, political and economic history and the religions, art, architecture and literature of the ancient age are taught.

Farm panel to assess varsities programmes

Dr. M.S. Swaminathan, Director-General of the Indian Council of Agricultural Research said in Madras recently that the farm universities lacked proper facilities for learning by doing, which was necessary to strengthen the agricultural programmes in the country. A committee headed by Dr. M.S. Randhawa will review the programmes of agricultural universities in order to turn out graduates who would be capable of working with their own hands. The other aspects that would be enquired by this committee was how far science education could be made useful for rural development. It would also analyse how to enlist industrial organisation support for such programmes. He suggested that the village adoption schemes could better be called “task adoption schemes”. Health and agriculture should form the core of these projects so that each agency in the project area could adopt a particular task to be accomplished. This would go a long way in appraising the quantitative and qualitative achievement of each task.

Dr. Swaminathan suggested compilation of rural balance sheet of the assets and liabilities of each village—an-integrated resource inventory—and a malady remedy analysis to identify the specific constraints affecting the life and the earning capacity of the people. A programme of field visits and discussion with participant groups would also go a long way in effective-

vely implementing the action plan. Dr. Swaminathan suggested that a principal coordinating officer assisted by people's committees and representatives of the various agencies that have adopted the different tasks could take up the coordination and monitoring of the programme implementation and its impact. A rural service corps consisting of young professionals who volunteer to work in the field of rural development for two or three years could be organised by universities and industrial organisations to "initiate the process of marrying brawn and brain in promoting the scientific utilisation of the available resources of each area." He said that there should be permanent training centre for imparting skills in the various fields based on the principle of learning by doing, mobile training and demonstration unit to reach out to interior and remote rural areas, a rural service society taking care of credit facilities and distribution of farm inputs as well as custom hiring of equipment and a warehousing and marketing component to ensure the participants a legitimate share of the profit. An agro-meteorological centre, a forest nursery and a developmental school would prove useful components to such a centre. In monitoring such programmes their progress should be measured in terms of actual additional income and the man-days of employment accrued to the participant groups and not in terms of physical production targets alone.

Coimbatore and Tiruchi to have legal study centres

Two legal study centres are proposed to be set up at Tiruchirappalli and Coimbatore. The Madras University is also considering the transfer of two law colleges at Madras and Madurai from the State Government to the university. Preliminary discussions have already taken place between the government and university authorities.

The University of Madras also convened recently a conference to discuss the various recommendations of the Law Commission appointed under the chairmanship

of Mr. G. Swaminathan. It was strongly felt that there should be no increase in the present intake of Madras Law College but the strength of Law College at Pondicherry should be raised from 60 to 120. The university would however subsequently reduce the strength at these two colleges after the other education centres for legal studies have been developed at Coimbatore and Tiruchirappalli.

The conference also emphasised that the objective of legal education should be to promote knowledge and skill in the legal science in relation to specific social and human situations. It was of the view that the knowledge of law and skills required competence in English and for performing in the legal area in the States, knowledge of regional languages was also essential. It appreciated the recommendations of the Bar Council and the University Grants Commission in regard to admission of students and appointment of part-time teaching staff. The need for organising continuous refresher courses and training programmes for the staff and law colleges was also recognised.

Dr. Adiseshiah said that during the past two years the process of reform and restructuring in all the faculties of the university, other than the law faculty, have been completed. This conference was convened especially to advise the university and the syndicate as to how the phased programme of reform of legal education in the university should be carried out in the light of the recommendations of the Law Commission and bearing in mind the overall reforms suggested by the University Grants Commission. He suggested that the question whether legal education should be under the university or the government be left as it is till they were able to find a satisfactory solution in consultation with the government.

Andhra organises commerce workshop

A three-day regional workshop in commerce was organised at Andhra University. The focus of discussion was on the goal and strategies of commerce education

in the country at the university level. It was generally felt that the commerce education should be linked up with the socio-economic needs of the country and the studies in commerce should be made more relevant to the needs of the society. Prof. M.V. Mathur, Director of the National Institute of Educational Planning and Administration said that the time had come when commerce education in the country had to be planned after looking at the direction and success achieved so far as there was an allegation that it was "neither liberal nor professional". He wanted the participants of the seminar to examine what should be the specific responsibility of commerce education at the undergraduate level.

Prof. M.R. Apparow, Vice-Chancellor of Andhra University said that his university would soon establish an advanced centre for studies in commerce. Prof. K.V. Sivayya, Director of the workshop and Head of Commerce Department of the University suggested exploring all possibilities to integrate work experience as well as national service scheme with curricula. He wanted that this aspect should be looked into properly when subjects for modernisation of the syllabi were considered.

Priority for faculty improvement

The Directorate of Collegiate Education, Tamil Nadu, is giving top priority to the faculty improvement programme initiated by the University Grants Commission. Large number of teachers of aided and government colleges have approached the Directorate for their placement in different state universities. Most of the universities have already finalised their selections for this programme and teachers have been asked to join the respective departments as early as possible, with the prior permission of the Directorate.

The scheme of faculty improvement programme envisages the sponsoring of the teachers concerned by the management in the case of aided colleges. The salary of the teachers during their depu-

tation to the university under this programme is to be paid in full by the management and would be assessable for necessary financial grant by the Directorate of Collegiate Education. The programme will raise the standards of education at the college level in coming years.

Garhwal's achievements

The Hill University of Garhwal has made considerable progress in its academic affairs. Several measures have been taken to improve the academic standards and to promote researches in the various disciplines of Science and Humanities. A research project to study the attitudinal problems in Botany and Physics has been launched. The Technology and Science Department of Govt. of India has sanctioned a project costing Rs. four lakhs for research on high altitude plants dynamic and changes in crop patterns. A high altitude station has been set up on Tungnath at a height of 12000 ft. A multi-disciplinary approach is being adopted for the settlement patterns under the auspices of the Institute of Himalayan Studies.

The recent excavation carried out by the Department of Archaeology at Ranikhet, across the Alaknanda, has thrown a new light on the entire history of Garhwal. The new historical findings have taken the history of Garhwal back to 6th century B.C. Researches in geography, tourism and pilgrimage are being conducted by the institute sponsored by the University Grants Commission. The cultural survey of the Badri Mandal has been made recently. A centre of folk culture would be established by the university.

Dilemma of Karnataka engineering students

The Karnataka Government had set up a committee under the chairmanship of Dr. K.A.V. Pandalai, Director, IIT, Madras, in January this year to examine the existing facilities available in the engineering colleges of the State. The committee was also to determine the intake disciplinewise taking into consideration the require-

ment of the engineering profession; to suggest measures for the improvement of existing courses run by the colleges and assess the financial and administrative requirements for the purpose. The ten-member intake committee was asked to report to the State Government within a period of three months. For want of sufficient time the committee visited only few colleges and fixed the intake of various colleges disciplinewise without making an in-depth study of the problem and the State's requirement of engineering personnel. The intake of fifteen engineering colleges of the State for 1977-78 has been reduced from the last year's 3,000 to 2,581.

The State PUC results have been delayed and are yet to be announced. Meanwhile the candidates from other States where the PUC results were announced much earlier were said to have secured the management quota seats of private engineering colleges by paying the capitation fee of Rs. 10,000 and Rs. 12,000 as fixed by the Government for unaided and aided engineering colleges respectively. This has resulted in big rush for the Karnataka candidates seeking admission. Many of them are likely to be deprived of the opportunity of getting admissions for no fault of theirs. The problem of engineering admissions has become all the more difficult. Unless the Government decides to defer the implementation of the recommendations of the intake committee and restore the intake for 1977-78 to last year's level, the situation is likely to deteriorate further.

Karnataka scraps PG medical courses

The Karnataka University has decided to discontinue its postgraduate medical courses from this academic year. Dr. R.C. Hiremath, Vice-Chancellor, informed the Principals of the affiliated colleges of the university when they met him recently. He said that the State Health Minister had suggested a common selection board for selecting students to the postgraduate medical courses in the three universities of the State. But

the university opposed the move on the ground that it was its prerogative to manage the courses including its admissions. The university had been running postgraduate medical courses for the last twelve years at the Karnataka Medical College, a government college at Hubli. As many as sixteen diploma and degree courses were offered and more than 100 students were admitted every year. University's postgraduate programme was approved by the Indian Medical Council and had gone on satisfactory. The university was planning to establish a medical research centre to further improve the standards of various medical courses.

The existing university Act also had no provision to delegate powers of running a postgraduate course to any institution including the Government and the university alone has the authority to run them. The decision of the Government to take over the courses is therefore surprising. It was rather unfortunate that no detailed discussion took place between the university and the State authorities before the final decision was taken. The Chancellor, Shri Uma Shankar Dikshit has been acquainted with the situation. The university however has handed over all the papers to the Government and requested the State Government to manage the postgraduate courses themselves in case they wanted to have centralised admissions. But the Government would have to seek the affiliation from the university afresh.

Bihar Board suggests revision of syllabi

The Bihar State Inter-University Board had constituted several sub-committees to revise the courses of study of universities in the faculties of education, medicine, law and commerce and make them up-to-date. The first meeting of the sub-committee on education was held under the chairmanship of Dr. S.P. Sinha, Vice-Chairman of the Inter-University Board. He stressed the need for revision of syllabi of various subjects in the universities of the State. During recent years the practices of edu-

cation have undergone a radical change. He advised the members of the committee to prepare a uniform syllabus for the B.Ed and M.Ed examinations which must reflect the national thinking on teacher education.

Dr. Damodar Thakur, Director, Higher Education and Mrs. Shakuntala Sinha, Director of Education, also attended the meeting. The members of the sub-committees on law, medicine and commerce also met under the chairmanship of Mr. K.B.N. Singh, Chief Justice, Patna High Court, Dr. B. Mukhopadhyaya and Dr. N.L. Nanda, Head of the Department of Commerce, Patna University, respectively and discussed ways and means to make the syllabi uniform and up-to-date.

Visiting American teachers at SNTD

The SNTD University in collaboration with the United States Educational Foundation in India, organised a training programme in Asian studies for twentyfour teachers from New York. Dr. (Mrs) Madhuri Shah, Vice-Chancellor of the university during the inauguration of the course stressed the importance of such programmes and said that they helped among other things a fusion of culture of the East and the West. Dr. Donald Johnson, Programme Coordinator of the group also emphasised the value of such visits and commented on the similarities in the cultures of India and America. He said that the number of schools in the USA which had departments of Asian Studies are on increase. The group which consists mostly of teachers of Asian Studies would collect detailed information during the fifty-day training and will submit theses on India based on this data subsequently.

Inter-University transfers

Dr. V. Narayan Karan Reddy, President of the Osmania University Teachers Association has opposed the proposed move of the government to transfer the university professors, readers and

lecturers from one university to another. He said that this arrangement will create confusion in the educational administration. However, the exchange of teachers for a short period, to begin with, in the three universities of Andhra Pradesh may generate better inter-university relations. The Government has mooted this idea to remove the static attitude in the academic field as the inter-university transfers would benefit the students of other universities to gain from the teachings of the experienced and renowned teachers. A conference of State Vice-Chancellors would be shortly convened by the Education Minister to discuss the matter further.

Panjab to admit students under the new pattern

The Syndicate of Panjab University has decided that the students who have passed the 10th class examination conducted by the Central Board of Secondary Education, New Delhi, under the new pattern of education would be allowed to join the pre-university course in the colleges affiliated to the university. The same facilities would also be available to students of 10th class under the new pattern course from other parts of the country.

Regarding admission to B.Ed colleges the Government of Punjab will have the powers to nominate 5% candidates to each of the colleges of education. These additional seats would however be over and above the sanctioned strength of the colleges. The Vice-Chancellor has also been authorised to nominate 2% of the seats in addition to the sanctioned strength in each non-government college of education from deserving hardship cases.

New PG courses in Andhra medical colleges

The Andhra Pradesh Government is considering a proposal to introduce postgraduate courses in neurology, nephrology, metabolic disorders, gastroenteritis and communicable diseases at the medical colleges of Tirupati,

Guntur and Kurnool. The university authorities have already been consulted in this connection and their recognition and collaboration would be available for these new courses. The Government is providing a sum of Rs. thirteen lakhs for providing accommodation to about five hundred students of Gandhi Medical College. A hostel would be soon constructed for this purpose. At present some of the students of the college have to stay out and only boarding provisions could be made by the university for some of them. With the construction of the new hostel this problem would be eased to some extent.

Rush for NIS courses

There has been a great rush this year to get entry to coaching courses in various sports disciplines at the Netaji Subhash National Institute of Sports, Patiala. This year graduates with inter-university participation in sports were given preference. Non-graduates having requisite experience of participation in the national level sports meets were also considered. More than one thousand applications were received for admission to different courses. Of them 650 were called for interview. Ultimately only two hundred were admitted. Athletics, basketball and volleyball are more in demand. But the maximum trainees were admitted to athletics course followed by basketball, volleyball and hockey. At the Bangalore centre of the institute more than 100 trainees were admitted during the year.

Rohtak named after Swami Dayanand

The Haryana Vidhan Sabha has passed a Bill to rename the Rohtak University as Maharshi Dayanand University. The Assembly has already passed the Bill recently to rename the B.N. Chakravarty University as Kurukshetra University. The Bill has replaced the Ordinance issued on April 7 last in response to the sentiments of the people of Haryana.

Education Convention at Calcutta University

(From our special correspondent)

Chief Minister of West Bengal, Mr. Jyoti Basu, called for a joint endeavour of students, teachers and guardians to 'restore the academic sanctity' of West Bengal, in an education convention organised jointly by the Students' Federation of India, the Progressive Students' Union, and the All India Students' Bloc at Calcutta University.

Mr. Basu explained that the students were not solely responsible for the "academic anarchy".

Mr Sambhu Ghosh, Minister for Higher Education said, that students' grievances over question papers could be resolved by setting up a "Question bank". Mr. Partha De, Minister for primary and secondary education agreed that the various problems arose from the inherent contradictions of the present education system. Dr. Sushil Mukherjee, Vice Chancellor of the Calcutta University, who presided, expressed his hopes of a perfect co-operation between the government and the University, which was essential, in curbing the various irregularities. Students' organisations promised their whole hearted support for this cause, and in a resolution urged all academic quarters to help stop malpractices in this field.

The subject, that was uppermost during the discussion, was the recent disturbances during examinations. The postgraduate examinations which were held twice could not be held peacefully on the first day again. Some M.B.B.S. exams had to be cancelled for the same reasons.

The VC of Calcutta University after consultation with the Chief Minister and Chief Secretary Mr. B.R. Gupta, stated that an adequate number of policemen will be posted outside examination centres only to assist invigilators and university authorities, when their help will be sought for. This, he said, was a precaution to maintain "a peaceful atmosphere." The invigilators would search the examinees in the presence of the police, if he thought it necessary. However he

made it clear that in no case would the police resort to "violence."

Mr. Sambhu Ghosh, made it plain that the Left Front Govt. would not tolerate any political interference in the running of universities. He referred to the case of Rabindra Bharati University where five students had been arrested for allegedly holding unlawful assembly and obstructing willing candidates from appearing for their exams.

Mr. Basu, took particular exception to medical students. He said that a section of the students cannot be allowed to hold the entire educational system, indeed the whole society, to ransom. Indeed some honest students sought 'protection' in the examination halls.

Students of all five medical colleges in West Bengal, in a memorandum submitted to the VC, expressed concern over the recent incidents, that led to the cancellation of the final M.B.B.S. examinations. They suggested constructive measures to help stop cheating in exam halls. They opted for short 'objective type of questions with alternatives in place of long essay type questions, conforming to the syllabus suggested by the Medical Council. The essay type questions have been discontinued in many Universities in India but 'tension' between the Council's President and the Dean of the Faculty of Medicine has impeded implementation of this step in West Bengal. They demanded such question papers in all papers in Surgery, Medicine and Gynaecology. The syndicate has agreed to set such papers. Secondly, they demanded that same set of examiners be appointed for both theoretical and practical examinations, to avoid becoming victims of 'estranged relations' between professors and paper setters of two Medical Colleges.

The Indian Medical Association (W. B. branch) while condemning malpractices by students have much to say to the authorities.

They demand that a high power Committee be set up to go into the 'root causes of such disturbances. According to Dr. Tarun Banerjee, Head of the Dept. of Gynaecology and Obstetrics, Calcutta National Medical College, medical education should be managed by a separate directorate of the State Govt. The Director should have full independence and be answerable only to the Health Minister.

Mr. Jyoti Basu promised to look into the matter and discuss it with Health Minister. "The problem has to be dealt with in its entirety", he concluded.

Workload norms for varsity teachers

The Syndicate of Madras University has prescribed workload norms for all teachers including the demonstrators and tutors in affiliated colleges. These norms will be taken into consideration while assessing grant-in-aid by the State Government. Dr. Malcolm Adiseshiah, Vice-Chancellor of the University said that the university has welcomed the decision of the State Government for revising the pattern of grant-in-aid and was happy that the "approved staff" would be the staff appointed according to the university norms.

He also informed that a sum of Rs. seven lakhs was recently sanctioned by the University Grants Commission to ten colleges for development of the postgraduate and undergraduate facilities. The university also approved the new courses in MBA in 'Urban Planning and Economics' and also in 'Urban Transportation System' in relation to the Madras Metropolitan Development Authority. Master's course in Library Science was also approved. A faculty of homoeopathy would soon be established. A committee has been constituted to suggest the details of the academic programme.

The open university programme of Madurai University has become popular in Madras and about fortytwo local study centres have been opened by Madurai University authorities. The University of Madras is extending all cooperation in the implementation of this programme.

Panel to study drug abuse

The Union Government has set up a national committee to study the problems of drug abuse in the country particularly among the youth in the university campuses. The committee will make an analytical assessment of the problem and suggest remedial measures. The Department of Social Welfare has sanctioned seven research projects to obtain empirical data on the extent of drug abuse among the college and university students in the country. The findings of these research studies will enable the government to examine the problem in its proper perspective and initiate remedial measures.

Annamalai to honour PM

The Prime Minister, Mr. Morarji Desai, has consented to inaugurate the Golden Jubilee celebrations of the Annamalai University early next year. Dr. S. Chandrasekhar, Vice-Chancellor of the University informed that the university would hold a special convocation during the Prime Minister's visit to confer on him an honorary doctorate.

Teachers demand effective representation in Senate

The Punjabi University Teachers Association has demanded restoration of status of the Senate as the supreme executive of the university. During the period of emergency the Senate was converted into a deliberative body. The Teachers Association has also demanded the democratisation of the Senate and other bodies of the university for effective representation for the faculty. The statement of Dr. P.C. Chunder, Education Minister assuring the restoration of democratic functioning of the universities which had been curtailed during emergency was widely welcomed by the faculty.

Aligarh act likely to be amended

Dr. P.C. Chunder, Union Education Minister while speaking in the Lok Sabha on his Ministry's demands for budgetary grants,

accepted in principle the demand of the minority community for changes in Aligarh Muslim University Act to restore the democratic elements in the administration of the university. He further informed that he was having discussions with the Vice-Chancellors and other representatives of the minority community.

Students demand union at Kurukshetra

The Akhil Bhartiya Vidyarthi Parishad unit of Haryana has demanded the establishment of a students union at the Kurukshetra University. A deputation of the Parishad met the Vice-Chancellor and emphasised the urgent need of a duly elected union so that the students may be familiar with the democratic way of life.

Students oppose LLM full-time course

The students have protested to the Maharashtra Government against the decision of Bombay University to make its LLM course full-time. They feel that this decision of the university will come in the way of thousands of employed persons as well as practising law students who would be deprived of higher education in law. A deputation of city law students led by the Secretary of the Akhil Bhartiya Vidyarthi Parishad submitted a memoran-

dum to the State Education Minister, Mrs. Pratibha Patil.

Grants for educational centre

The University Grants Commission has sanctioned a grant of Rs. 11 lakhs to the M.S. University of Baroda for its centre of advanced studies in education and for conducting research in education during the next four years. Dr. B.M. Buch, Head of the Centre, made this announcement in Baroda recently.

Personal

1. Dr. Jagdish Narayan has been appointed Vice-Chancellor of Roorkee University.
2. Dr. A.K. Sen has taken over as Vice-Chancellor of Indira Kala Sangit Vishwa-vidyalaya.
3. Dr. V. K. Sukumaran Nayar has been appointed Vice-Chancellor of University of Kerala.
4. Dr. B. D. Nag Chaudhuri, Vice-Chancellor of Jawaharlal Nehru University has been re-elected to the International Board of Governors of the East-West Centre for a three-year term.
5. Thiru M. Gowri Shankar has been appointed Registrar of Annamalai University.

Reconsideration of Sen's recommendations

(Continued from page 379)

programmes. The Committee was of the definite view that any kind of coercion used or any decisions taken under duress should be regarded as invalid. In such a situation it was incumbent on the Government to take steps to prevent such incidents from happening. In this connection the Committee recalled the resolution passed by the Association of Indian Universities in 1966 :

"That students should not have recourse to violence; and that while enjoining on the police to avoid excessive force, Governments deal firmly with breaches of law and order whenever and wherever they take place."

The Committee also had a meeting with Professor P.C. Chunder, the Union Minister for Education, for some time and discussed issues of mutual interest in a very cordial atmosphere. In the course of his remarks, the Minister observed that he believed in the autonomy of the universities which was also to be coupled with their accountability to the society at large. For his part he would like to see that the democratic functioning of the universities is restored everywhere. In order to do so, he said, he would consult all those connected with the educational process, students, teachers and administrators.

Dr. Shiv Mangal Singh 'Suman', President of the Association, presided over the meeting. □

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Bastia, Surendranath. Some problems on axisymmetric flow and heat transfer in incompressible fluids. Utkal University.
2. Bhola, H.L. The theory of best approximation. Jiwaji University.
3. Goel, Sri Narayan. A study in error correcting codes through Lee-distance. Meerut University.
4. Mahanti, Nirmal Chandra. Waves in non-homogenous fluids. Visva-Bharati.
5. Narsimha Rao, V.V.L. Self reciprocal function. Osmania University.
6. Praduman Kumar. On certain problems in the theory of queues in series. Meerut University.
7. Sanyal, Jagabandhu. On infinitesimal transformations of differentiable manifolds. University of Calcutta.
8. Sinha, Tarini Prasad. Numbers: Real and ultra-real. Bhagalpur University.
9. Thakur Prasad Singh. Absolute Riesz summability of fourier series and allied series. Awadhesh Pratap Singh University.

Statistics

1. Gupta, Jai Prakash. Some contributions to the theory of sampling for correlation coefficient. Meerut University.
2. Patel, I.D. Statistical inference concerning parameters involved in some distributions. Gujarat University.
3. Saxena, Prem Chandra. Dual and allied problems in mathematical programming. University of Delhi.
4. Vishnu Dayal. Some aspects of discrete order statistics. Meerut University.

Physics

1. Agrawal, Mahendra Kumar. Lattice dynamics of heavier alkali halides of rocksalt structure. Meerut University.
2. Ashok Kumar. Spectroscopic studies in some 5-d transition metal complexes. Meerut University.
3. Bujarbarua, S. Parametric interaction of waves in magnetized plasma. Gujarat University.
4. Chaturvedi, P.K. Linear and nonlinear theory of ionospheric irregularities. Gujarat University.
5. Chhipa, G.M. Absorption of radio waves in the lower ionosphere. Gujarat University.
6. Das, Paramita. Studies on the transport properties of thin solid films. University of Calcutta.
7. Datta, Sucheta. Studies on the transport and equilibrium properties of gases. University of Calcutta.
8. Eswara Prasad, Somayajula Rama Jogi. Study of the electrical behaviour of ferroelectric triglycine sulphate in the process of developing a capacitive transducer. Andhra University.
9. Jain, Nirmal Kumar. Ionization of atoms, molecules and ions by electron impact. Meerut University.
10. Jain, R.K. Instabilities in ionospheric plasma. Gujarat University.
11. Karmakar, Binoy Bhusan. Application of Volterra type rate equations to some ecological problems. Visva Bharati.
12. Kulkarni, Vasant Wamanrao. Studies in luminescence. Marathwada University.
13. Mahesh Chandra. Contributions to the study and applications of transistor multivibrator operation. Meerut University.
14. Mohana, S. Electron optical studies of vacuum deposited thin films of some metals and semiconductors. Sardar Patel University.
15. Patil, Prabhakar Baliram. Methods of mathematical physics and their applications. Marathwada University.
16. Patrawale, Prabhakar Nagnathrao. Nuclear studies. Marathwada University.

17. S. Sampath. A study of the equatorial electrojet. Gujarat University.

18. Ramnandan Singh. Phonon frequencies and transport property of metals. Bhagalpur University.

19. Santhakumari, B. Studies in molecular mechanics using spectroscopic data, exact force field and bond in homogeneity. University of Cochin.

20. Sehra, P.S. Atmospheric structure exploration over antarctica and internhemispheric comparsion. Gujarat University.

21. Sinha, H.S.S. Studies in equatorial aeronomy. Gujarat University.

Chemistry

1. Acharya H.K. Studies on polymeric materials with ion-exchange properties. Saurashtra University.

2. Bansal, Rashmi Rani. Investigations in some chelates of less common transition elements. Meerut University.

3. Bhagawan, Gawali Subhash. Extraction and separation studies of some metals. Shivaji University.

4. Chandra Prakash. A study of 3,4-dioxygenated coumarins and synthesis of some naturally occurring coumarins. University of Delhi.

5. Das Mazumdar, Anjani Kumar. Studies on some heterocyclic compounds. Bhagalpur University.

6. Desai, J.S. Investigations on some analytical reagents. Gujarat University.

7. Dhanani M.L. Studies on optical activity and chromatography. Saurashtra University.

8. Duorah, Kalpana. Radiative alpha-capturing reactions at elevated stellar temperature: Reaction rates, nucleosynthesis and energy generation. University of Gauhati.

9. Gajender Pal Singh. Studies on rheological behaviour of homopolymers and polyblends in concentrated solutions. Kanpur University.

10. Gopinath Nair, M.R. Physico-chemical investigations on the reaction of aromatic amines and formaldehyde in acid medium. University of Kerala.

11. Govindan, S.V. Investigations on natural products. I.I.T., Bombay.

12. Guha, Dipak. Studies on the electrical and catalytic properties of vanadium pentoxide and vanadium bronzes. I.I.T., Bombay.

13. Gupta, Ramesh Chander. Chemical studies on biotransformation of isoniazid and related pyridine compounds. Kanpur University.

14. Indra Dev. Studies on the chemical composition of soap nut (*Sapindus Mukorossi*) seed kernel and physico-chemical studies of constituent portions. Meerut University.

15. Jain, Mukesh Chandra. Evaluation of magnetic moment and ligand field parameters in transition metal complexes derived from 4-benzylamidothio-semicarbazide and its thiosemicarbazone. Meerut University.

16. Kaddargi, Shivassharan Siddappa. Studies in the indole field. Karnatak University.

17. Koshel, K.C. Corrosion of 3-5 aluminium and its inhibition. Gujarat University.

18. Kul Bhushan Kumar. Studies on solublizing action and physical properties of magnesium soaps. Meerut University.

19. Mandhar, Mangla Devi. Chemical investigation of medicinal plants. Kanpur University.

20. Marutatmaja Rao, P.L.K. Synthesis, physico-chemical studies and physiological activity of isoxazole derivatives and their intermediates. Osmania University.

21. Nanavaty, N.T. Studies on optical activity in some reactions. Gujarat University.

22. Nigam, Adarsh Kumar. Physico-chemical studies on the complexometric behaviour of 1-amino 3-thioisindoline with transition metal ions. Kanpur University.

23. Nigam, Ashok Kumar R. Some reactions of 1-phenylethanol phosphate esters. Jiwaji University.
24. Pachauri, Om Prakash. Physico-chemical studies on mixed ligand complexes of Th (IV) ion. Meerut University
25. Pardeshi, Leela Gulabchand. Studies in properties of compounds of some fatty acids. Marathwada University.
26. Pardhy, R.S. Investigations in terpenoids. I.I.T., Bombay.
27. Parghi, J.V. Studies in new analytical reagents. Gujarat University.
28. Parikh, S.P. Studies in basic amides and related compounds. Gujarat University.
29. Patel, G.A. Studies in inhibition of corrosion of aluminium. Gujarat University.
30. Patel, Ramanbhai Narambhai. Studies in polycondensation. Sardar Patel University.
31. Patra, Panchanan. Annealing of chemical radiation damage in isomeric complexes. Utkal University.
32. Raj Pal Singh. Search for new biologically active organofluorine compounds. Meerut University.
33. Rana, Hari Singh. Physico-chemical studies on bi-ligand complexes of some of the lanthanons. Meerut University.
34. Rastogi, Subhash Chandra. Physico-chemical and spectral properties of some heavy metal ion complexes with N/O containing ligands derived from benzofuran. Meerut University.
35. Sanduja, Sudershan Kumar. Mass spectrometric and synthetic studies of 2'-substituted isoflavones and 2-arylbenzofurans. University of Delhi.
36. Sangal, Sudhir Kumar. Stereochemical features of some metal complexes of pyridine derivatives. Meerut University.
37. Satya Vir. Physico-chemical studies on the metal complexes of phenyl-hydrazines. Meerut University.
38. Saxena, Sashibala. Organic azides as reagents for identification of amino-acids. Jiwaji University.
39. Shah, Tarulata Bhupendra. Kinetics of nucleophilic substitution reactions of—Naphthacyl bromide. Sardar Patel University.
40. Shinde, Chandrakant P. Kinetic study of the reactions of some esters of tri-basic acid. Jiwaji University.
41. Sriramam, Kambhampati. Studies on the behaviour of some redox systems in titrimetric reactions. Andhra University.
42. Sunita. Synthetic studies in coumarins. University of Delhi.
43. Thakur, S.B. Synthesis on prostaglandin-like compounds. I.I.T., Bombay.
44. Trivedi, B.G. Synthesis of basic amides. Gujarat University.
45. Venkateswar Rao, K. Search for physiologically active compounds: Synthesis of 2-nitro-2'-hydroxyacetophenones and derived 2-oximinocoumaranones, 2-methyl-3-nitrochromones and 3-nitrochromones. Osmania University.

Earth Sciences

1. Lakshmi Nandan Bora. A study on water balance and drought climatology of Assam and the vicinity. Andhra University.

Engineering & Technology

1. Apte, Y.S. Optimal autostabilizer for a supersonic fighter aircraft. I.I.T., Bombay.
2. Ashirwad, Sureshchandra Bal. Determination of mass transfer characteristics of the porous cellulose acetate membranes, for 'reverse osmosis' separation with special reference to their evaluation. Nagpur University.
3. Barkar Hussain. Studies on stress-deformation and strength characteristic of large size rock fragments without and with fine cohesive soil. I.I.T., Bombay.
4. Katti, R.A. Analysis of kinetics of combustion reactions using linear system theory. I.I.T., Bombay.
5. Mohan, T.R.R. Sintering on zinc oxide. I.I.T., Bombay.
6. Patel, S.J. Studies in simulation and optimization. I.I.T., Bombay.
7. Sayann, K.S. Parameters affecting the performance of draft tube of a reaction water turbine. I.I.T., Bombay.

8. Saxena, Dinesh Narain. Study of residence time distribution in liquid semi-fluidised beds. Kanpur University.
9. Sheth, D.K. Studies in two phase flow: Effect of turbulence promoters and liquid viscosity in two component two-phase flow in a horizontal pipeline. I.I.T., Bombay.
10. Som Bhaskar. Some analytical studies on avalanche transit time diodes. University of Calcutta.
11. Sripathi, T. Flooding and mass transfer studies on the rotating perforated discontactor. Kakatiya University.

BIOLOGICAL SCIENCES

Biochemistry

1. Dasmahaptra, Bimalendu. Studies on mold dextranases. University of Calcutta.
2. Gopalakrishna Pillai, N. Biochemical investigation on the cocount palm. University of Kerala.
3. Guha, Sujitkumar. Urea biosynthesis in human fetuses. University of Calcutta.
4. Patel, H.H. Studies on biochemical sciences: Aspects of some air borne fungi, and basidiomycetes of Bhavnagar. Saurashtra University.
5. Sukhdev Singh. Protein quality of pulses and vitamin A metabolism. Punjab Agricultural University, Ludhiana.

Botany

1. Balvinder Kumar. Effect of saline alkaline conditions on plant growth and metabolism. Haryana Agricultural University, Hissar.
2. Bhanja, Pradyot. Fluorescence microscopy in molecular cytology: An investigation on primary and acridine orange-induced secondary fluorescence of cells. University of Burdwan.
3. Buth, Mohd. Maqbool. Comparative anatomy in order urticalos with special reference to local genera. University of Kashmir.
4. Chattopadhyay, Narayan Chandra. Studies on certain aspects of the physiology of *Fusarium moniliforme* var. *Subglutinans* wr. et. rg. and the associate malformation in mango. University of Burdwan.
5. Chaudhuri, Asish Kumar. Investigations on some wood rotting fungi in relation to decay resistance of *Pterocarpus marsupium* Roxb. University of Calcutta.
6. Danaiah, Vallura. Studies on the cruciferae of India. Sardar Patel University
7. Diwedi, Gauri Shanker. Ecophysiological studies of *Heliotropium ovalifolium* Forsk. A common ruderal species of low lying beds. Vikram University.
8. Fotedar, Rattan Lal. Structure and development of phloem in some ferns. Sardar Patel University.
9. Gangadhara, M. Epidermal structure and ontogeny of stomato in some dicotyledons. Sardar Patel University.
10. Gupta, Hardar Prasad. Studies on experimental candidosis with special reference to new potential anti-candidosis agents. Kanpur University.
11. Jain, H.K. Ecosystem analysis of grasslands near Rajkot. Saurashtra University.
12. Jain, Suresh Chandra. Foliar studies in polypodiaceae. University of Delhi.
13. Kuriachan, Philomena. Cytotaxonomic studies in solanaceae. University of Kerala.
14. Mehta, D.H. Some biophysical and biochemical aspects of growth and differentiation in glycine max and *Hordum vulgare*. Gujarat University.
15. Mehta, V.B. A study on carbohydrate metabolism in algae. Gujarat University.
16. Narhari Rao, B.V. Effect of physiological preconditionings on the growth and development of some crop plants. Sardar Patel University.
17. Patunkar, Bhanudas Wamanrao. Contribution to the botany of Marathwada-V: Taxonomic studies in the grasses of the region. Marathwada University.
18. Rajagopalan, Rita. Germination regulating mechanisms in seeds of some weeds. University of Calcutta.
19. Ram Pal Singh. Monographic studies of litchi chinesis. Meerut University.
20. Shah, N.K. An approach to the problem of the role of phenolic substances in the growth of *Amaramthus vididis* L. seedlings. Gujarat University.
21. Sharma, Y.N. Studies on the comparative anatomy of certain taxa of the family gramineae. Jiwaji University.

22. Sinha, M.P. Studies on mushrooms of Orissa. Utkal University.

23. Tyagi, Anil Kumar. Metabolic studies on mycobacteria. University of Delhi.

Zoology

1. Bhagat, Banshi Prasad. Genetics of laboratory and natural populations of drosophila species. Bhagalpur University.

2. Goyal, Dharmendra Pratap. Studies on the morphology, histology, histochemistry and development of the carotid labyrinth in Rana Tigrina Daud. Meerut University.

3. Hajra, Ashis Kr. Influence of soil factors on the distribution of collembolan fauna in cultivated and uncultivated fields of West Bengal. University of Burdwan.

4. Jawale, Mohan Dagduji. Some aspects of biology and ecology of the Indian freshwater crab, Barytolphusa guerini. Marathwada University.

5. Koul, Tej Kumari. A study on the functional anatomy of the Kashmir bat, pipistrellus mimus with a survey of the bats of Kashmir. University of Kashmir.

6. Kshatriya, A.M. Studies on the structure and function of skeletal muscle under the influence of various physiological conditions. Gujarat University.

7. Sinha, Anil Kumar. Some aspects of reptilian endocrinology. Bhagalpur University.

8. Varma, Surendra. Studies on some gastro-intestinal nematodes of pig at Hissar. Meerut University

Agriculture

1. Durag Vijay Singh. Studies on the mycoflora of wheat seed. Kanpur University.

2. Ghoshdastidar, Subrata. Humic acids at the interfaces. University of Calcutta.

3. Manickam, T.S. Studies on laterite soils of Tamil Nadu (India). Tamil Nadu Agricultural University, Coimbatore.

4. Md. Giasuddin Ahmed. Epidemiological and physiological aspects of red-rot disease of sugarcane in Assam. University of Gauhati.

5. Mukhopadhyay, Debdas. Investigations on Macrophomina phaseoli (Maubl.) Ashby associated with stem rot of jute and its survival in presence of antagonistic organism in host rhizosphere. University of Burdwan.

6. Nagarajan, M. Studies on the physiology of heterosis

in hybrid sorghum, Sorghum bicolor (L) Moench. Tamil Nadu Agricultural University, Coimbatore.

7. Narain Singh. Studies on the effect of plant growth regulators on fruit set berry development and fruit quality in certain varieties of grapevine, It is vinifera L. Kanpur University.

8. Raj Pal. Effect on varying levels of phosphorus, sulphur and plant density on yield and quality of different varieties of spreading type groundnut, Arachis hypogea in Meerut.

9. Ramalingam, R. Sethupathi. Induced mutagenesis in the genus, Capsicum L. Tamil Nadu Agricultural University, Coimbatore.

10. Ramanathan, K.M. Studies on dynamics of soil potassium. Tamil Nadu Agricultural University, Coimbatore.

11. Ram Chander. Salt tolerance studies in relation to vegetative growth yield and quality of tomato, Lycopersicon esculentum Mill. Haryana Agricultural University, Hissar.

12. Raval, H.N. Studies in infiltration rates for some Gujarat soils. Gujarat University.

13. Shrivastava, Birender Lal. Investigations on seed sterility in morus species Mulberry. Kanpur University.

14. Sihag, Ram Kumar. Regulation of nitrate reductase level in Pisum sativum. Jawaharlal Nehru University, Delhi.

15. Srivastava, Krishan Chander. Studies on the fungal degradation of cotton materials. Kanpur University.

16. Subrahmanyam, S. Studies on the effect of water management and graded nitrogen levels on growth, yield and uptake of nutrients in rice, Oryza sativa. Tamil Nadu Agricultural University, Coimbatore.

17. Yashvir Singh. Studies on inheritance of some quantitative characters in Chickpea, Cicer-arietum L. Haryana Agricultural University, Hissar.

Veterinary Science

1. Gopakumar, N. Pharmacological and biochemical effects of some sympathomimetic drugs in buffalo calves. Punjab Agricultural University, Ludhiana.

2. Patil, Nivrati Aba. Studies on developmental anomalies in chicks. Punjab Agricultural University, Ludhiana.

3. Rath, Bibhuti Bhushan. A critical analysis of an intensive cattle development project: Progress, problems and prospects. Haryana Agricultural University, Hissar.

4. Sharma, Sureshwar Nath. Retention of urine in bovines with special reference to uraemia and cystorrhaphy. Punjab Agricultural University, Ludhiana.

Additions to AIU Library

Association of Universities and Colleges of Canada, Ottawa. Survey of programmes of cooperation established between Canadian Universities and foreign institutions. Ottawa, Author, 1977. 145p.

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———Superannuation. Canberra, Author, 1976.

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India, Directorate of Nonformal Education. Directory of voluntary organisations working in the field of adult education in India. Delhi, Ministry of Education, 1975. xvi, 344p.

India, Ministry of Education. Educational developments in India: 1971-77. Delhi, Author, 1977. vi, 72p.

Krishan Gopal, Comp. Theses on Indian Sub-Continent 1877-1971: An annotated bibliography. Delhi, Hindustan (c1977) xix, 462p.

Laska, John A. Planning and educational development in India. New York, Teachers College Press (c1968) xi, 129p.

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Naik, J.P. Educational writings of R.V. Parulekar. Bombay, Asia (c1957) xxxix, 268p.

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Satya Sundaram I. Student unrest in India. Machilipatnam, Author, 1976. 116p.

Satya Sundaram I. Teachers' status in India. Machilipatnam, Author, 1976. 102p.

Seabury, Paul, ed. Universities in the western world. New Jersey, Free Press, 1975. 303p.

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Yadav, M.S. and Govinda, R. Educational evaluation: A package of auto-instructional material. Ahmedabad, Sahitya Mudranalaya, 1977. xii, 312p.

UNIVERSITY OF BOMBAY

Applications are invited for the following posts in the University:

Post/s	Department
1. Professor of Marathi	Marathi
2. Reader in Sindhi	Sindhi
3. Reader	Applied Psychology
4. Two Readers (Temporary)	Mathematics (Centre of Advanced Study)
5. Reader in Industrial Economics or Public Finance (Temporary)	Economics (Centre of Advanced Study)
6. Lecturer in Chemical Engineering	Chemical Technology
7. Reader in Microbiology	—do—
8. Three Professors	Jamnalal Bajaj Institute of Management Studies
9. Five Readers	—do—
10. Four Lecturers	—do—

The grades of the posts are:
 Professor—Rs. 1100-50-1300-60-1600;
 Reader—Rs. 700-50-1250 and Lecturer—Rs. 400-40-800-50-950. These scales are likely to be revised as per U.G.C. recommendations.

All posts carry the benefits of Dearness Allowance and House Rent and Compensatory Local Allowances at the rates sanctioned by the Executive Council from time to time. The posts, except those at Serial Nos. 4 and 5, carry the benefits of University Provident Fund. A higher starting salary may be given to a person possessing high qualifications. The appointments to the posts, except those under items 4 and 5, will be on probation for two years in the first instance, but this probationary period may be waived by the Executive Council in special cases. Other things being equal preference will be given to candidates from backward classes. Posts of Lecturers are reserved for scheduled castes and scheduled tribes and will be filled up by appointment of such persons only as shall satisfy the requirements regarding qualifications, experience etc. laid down for the posts, provided however that if no candidates are available from the scheduled castes and scheduled tribes, the posts will be filled up by appointment of duly qualified persons from among other applicants.

The general requirements for the posts, except for the post in the Department of Chemical Technology and the Jamnalal Bajaj Institute of Management Studies, are as under. The requirements for the posts in the Departments of Chemical Technology and Jamnalal Bajaj Institute of Management Studies are as mentioned below against the serial numbers concerned.

Professors and Readers:

- A Doctor's degree or published work of an equally high standard; and
- consistently good academic record with 1st or high 2nd class (B+) Master's degree in relevant subject or an equivalent degree of a foreign University.

Plus those additional qualifications prescribed by the University by way of specialisation, experience etc.

Lecturers:

- A Doctor's degree or published work of an equally high standard; and
- consistently good academic record with 1st or high 2nd class (B+) Master's degree in a relevant subject or an equivalent degree of a foreign University.

The details regarding qualifications, teaching experience etc. prescribed for the posts are as under:

Applicants for the post/s at serial :

No. 1: must have specialisation in Marathi language and grammar. They must also have a wide background and general competence in the subject, experience of teaching post-graduate classes for at least 10 years and guiding and conducting research work, and must have done independent research work of recognized merit.

No. 2: must have a wide background and general competence in the field of Sindhi language and literature and experience of teaching degree classes.

No. 3: must have experience of teaching and guidance of research work at the post-graduate level for at least five years.

No. 4: must have three years' teaching experience at the post-graduate level or evidence of three years' post doctoral research of high quality.

No. 5: must have a high second class at post-graduate examination and a Ph.D. or equivalent research work. Published research work would be an additional qualification. They must be conversant with modern tools of analysis. The Reader will be required to teach students for the M.A. degree by papers and guide research students, and conduct research in the subject.

Posts in the Department of Chemical Technology

No. 6: must have a doctor's degree in Chemical Engineering with good academic record.

or

A good academic record with first or high second class at Master's degree or an equivalent degree in Chemical Engineering or at least one year's research or professional experience. Specialisation in the field of mass transfer and/or fluid mechanics will be desirable.

No. 7: must have a basic degree in Food or Pharmaceutical Technology with adequate Post-graduate research experience in Applied Microbiology, or have a doctorate in Microbiology with research experience in Microbial Metabolism, Industrial Microbiology, Food or Pharmaceutical Microbiology. Experience of teaching and guiding research or in Industry will be considered as an additional qualification. The Reader will work in the section of Food Technology under the Professor of Food Technology and the Director of the Department and will be required to teach, supervise and conduct research in his own subject.

Posts in the Jamnalal Bajaj Institute of Management Studies

No. 8:—Professors (3 posts)

must have—(i) A good Bachelor's degree in Engineering/Technology/Mathematics / Statistics / Mathematical Economics, (ii) A good Post-graduate degree or Diploma in Management or Industrial Engineering with specialisation in any of the areas :

- Quantitative Marketing
- Productivity Management
- Management Audit,

and (iii) Five years' teaching experience as Reader or ten years' practical experience in the Industry.

Research Degree or published research work will be an additional qualification.

No. 9:—Readers (5 posts)

One for Data Processing:

must have :

(i) A good Bachelor's degree in Engineering / Technology / Mathematics/ Statistics/Mathematical Economics,

(ii) A good Post-graduate degree or Diploma in Management or Industrial Engineering with specialisation preferably in Computer Science, Information Systems or allied areas, and

(iii) Three years' Industrial/teaching experience in Systems Design and Computer Programming.

Two for Marketing:

must have :

(i) A good Bachelor's degree in Engineering / Technology/ Mathematics/ Statistics/Mathematical Economics,

(ii) A good Post-graduate Degree or Diploma in Management or Industrial Engineering with specialisation in Marketing, and

(iii) Three years' industrial/ teaching experience in the area of marketing.

One for Finance:

must have :

(i) A good Master's degree in Management with specialisation in Finance; OR A good Master's degree in any faculty and a Diploma in Managerial Accounting; or

A good Master's degree in any faculty and CA/AICWA

(ii) Three years' teaching/industrial experience.

One for Accounting:

must have :

(i) CA/AICWA with Post-graduate diploma in Management; OR Good Master's degree in any faculty and AICWA/CA

(ii) Three years' teaching/industrial experience.

Note: The requirement in regard to Post-graduate qualification may be waived only in cases of exceptional professional competence, for the posts of Professors and Readers.

No. 10:—Lecturers (4 posts)

must have :

(i) A good Master's Degree in Management; OR

A good Bachelor's degree in Engineering/Technology/Mathematics/Statistics/Mathematical Economics, and a Post-graduate Diploma in Management or Industrial Engineering; OR

A good Bachelor's degree and CA/AICWA and a Post-graduate diploma in Management.

(ii) Some work or teaching experience desirable

Two copies of the application in the prescribed form, which can be had from the Registrar, should be submitted so as to reach the Registrar, University of Bombay, Bombay-32, on or before 10th August, 1977.

Candidates called for interview will have to present themselves at their own expense.

Canvassing direct or indirect will be a disqualification.

K.S. KOLGE
Offg. REGISTRAR

UNIVERSITY OF JAMMU NOTICE

Applications on the prescribed form are invited for the following posts so as to reach the Registrar on or before August 8, 1977.

1. Readers in the scale of Rs 1100-50 1300-75-1600 One each in :
 - (i) Education (Measurement)
 - (ii) Economics (Statistics or Mathematical Economics)
2. Lecturers in the scale of Rs. 700-40-900-EB-40-1100-50-1300 in the following subjects :
 - (i) Mathematics—One (Mathematical Statistics)
 - (ii) Geology—One (Geohydrology)
 - (iii) History; three posts including one in leave arrangement. (One in Ancient History).
 - (iv) Sanskrit—Two (One in Indian Philosophy and other in Poetics/Grammar).
 - (v) Urdu—One.

For full details and prescribed application forms, please apply by sending a self addressed envelope of 25 cms x 10 cms. size bearing stamps worth Rs. 1.50 paise along with a crossed postal order for Re. 1/- drawn in favour of the Registrar, University of Jammu, Canal Road, Jammu (Tawi)-180001, Jammu & Kashmir State, cashable at Jammu Post Office.

Sd/-

(O.P. SHARMA)
DEPUTY REGISTRAR (ADM.)

PANJAB UNIVERSITY (CHANDIGARH) Advertisement No. 15/77

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, by 9.8.77 along with postal orders for Rs 7.50 for the posts of Research Fellows/Research Scholars and Rs. 5/- for other posts.

Posts, Pay Scales and Qualifications

(A) Instructor in Statistics-1 (Rs. 300 25-600)

1. M.A./M.Sc. in Statistics of an Indian University or an equivalent qualification of a foreign University, with at least a high second division or grade B plus.

2. Two years experience of teaching and research, with specialisation in at least one of the following areas:-

(i) Stochastic Processes (ii) Non-parametric inference

Desirable: Experience of teaching post-graduate classes in Statistics.

(B) Research Assistants (Rs. 300-25-600)

Commerce & Business Management-1, Education-1, Sociology-2, Microbiology-1, Biochemistry-1, Biophysics-1.

Commerce & Business Management

First or high second class post-graduate degree in Commerce/Business Administration/Engineering (With specialisation in Industrial Engineering/managerial sciences) with uniform by good academic record and aptitude for research. Preference will be given to those who have some experience in industry or research institution.

Education

1. Consistently good academic record with at least high second class (B+) Master's degree in Education or an equivalent degree of foreign University recognised by the Panjab University;

2. Experience of teaching in a University or College will be preferred.

Sociology

A first or high second class Master's degree in Sociology or Statistics and experience of research.

Microbiology

First or high second class Master's degree in Microbiology. Experience in the area of Microbial Physiology.

Biochemistry

First class M.Sc. in the subject with brilliant academic record with at least

2-3 years research experience and sound knowledge of modern biochemical techniques.

Biophysics

Essential

At least second class M.Sc. in Biophysics or allied sciences.

Desirable

Good academic career and familiarity with ultramicroscopy and other EM selected methodology.

(C) Teaching Assistants (Rs. 300-25-600)

Microbiology-2, Biochemistry-2, Physical Anthropology-1, Biophysics-2, Physics-4.

Microbiology

For Post No. 1

First or high second class Master's degree in Microbiology. Experience in the teaching of practical classes in the area of Agricultural and Food-Industrial Microbiology.

For Post No. 2

First or high second class Master's degree in Microbiology. Research experience in the area of tissue culture and virology.

Biochemistry

First class M.Sc. in the subject with brilliant academic record and adequate teaching experience. The candidate possessing Ph.D. degree would be preferred.

Physical Anthropology

A first or second class Master's degree in Physical Anthropology. Preference will be given to those candidates having teaching experience to their credit.

Biophysics

Essential

At least second class M.Sc. in Biophysics.

Desirable

2-3 years research experience as evidenced by publications of papers.

Physics

(i) M.Sc. in Physics with a high second class and distinguished academic record.

(ii) At least two years research experience.

(D) Senior Research Fellows-2 (Rs. 600/- p.m. fixed each).

(Under U.G.C. Programme of Special Assistance to the Department of Botany in the fields of Periodology including Morphogenesis, and Mycology and Plant Pathology).

The candidate should be an M.Sc. First class with Ph.D. in the discipline concerned or with at least 3 years research experience.

Senior Research Fellows-3 (Rs. 600/- p.m. fixed each).

(Under UGC Special Assistance Programme to the Inorganic Section of the Chemistry Department).

M.Sc. first or with high second class in Inorganic Chemistry. The candidate should have Ph.D. degree or have submitted thesis for Ph.D. degree or have published research work in recognised journals. The applicants should not ordinarily be more than 40 years of age. These Fellowships are for the maximum period of 2 years.

(E) Research Fellow in Commerce & Business Management-1 (Rs. 500/- p.m. fixed).

First or high second class MBA or M.Com. or M.A. in Economics/Operational Research/Labour and Social Welfare/Social work with specialisation in Labour Relations and Personnel Management/Master's Degree in Industrial Management with uniformly good academic record and aptitude for research work.

(F) Research Fellow in Statistics-1 (Rs. 450/- p.m. fixed).

M.A./M.Sc. in Statistics with first Division or grade A. Those who have appeared in the final examination of April/May, 1977 and hope to get good position may also apply. The Department has facilities for research in the following areas:-

- (i) Multivariate Analysis
- (ii) Non-parametric Inference
- (iii) Combinatorics and Design of Experiments
- (iv) Stochastic Processes.

Research Fellow-1 (Rs. 450/- p.m. fixed).

Deptt. of Zoology:

First class M.Sc. in Zoology with good aptitude for higher research work, the term of the fellowship is 3 years in the first instance.

(G) Research Fellows in Departments of Dayanand Chair for Vedic Studies-2 and Department of Guru Nanak Sikh Studies-2 (Rs. 400/- p.m. fixed each).

Research Fellows in the Department of Dayanand Chair for Vedic Studies Essential

First or high second class Master's degree in Sanskrit or Vedic Literature from a recognised University.

Desirable

1. Specialisation in Vedic Language or Literature.
2. Degree/Diploma of Oriental Title examination like Shastri, Acharya, Alankar etc.
3. Sufficient knowledge of the Literature of Swami Dayanand.

Research Fellows in Guru Nanak Sikh Studies

M.A. in History/Philosophy/Religious Studies/English/Punjabi and M.L.t. in Religious studies or Double M.As. in the above or allied subjects. Intimate knowledge of Sikh religion, its history and literature etc., having already shown capacity for original writing and research work, and possessing aptitude and potentiality required for assisting the Department in its research programme and other academic pursuits. knowledge of Sanskrit-Hindi/Persian-Urdu desirable; Teaching/Writing/Editing experience preferable.

(H) Junior Research Fellows-2 (Rs. 400/- p.m. fixed each).

(Under UGC Programme of Special Assistance to the Department of Botany in the fields of Bryology including Morphogenesis and Mycology & Plant Pathology (one Fellowship in each discipline).

M.Sc. First class with aptitude for research. These fellowships are for a period of three years in the first instance.

(i) Research Scholars (Rs 400/- p.m. fixed each).

Commerce & Business Management-2, History-2, Central Asian Studies-1, Sociology-2, Statistics-1, Sanskrit-2, Laws-2, Public Administration-2, Philosophy-1, Bio-Physics-2, Pharmaceutical Sciences—one each in Pharmaceutics, Pharmacognosy and Pharmaceutical Chemistry, Botany-3. Geology-2, Physics-2.

Note: 1. The scholarship amount for three posts of Research Scholars in Pharmaceutical Sciences will be Rs. 500/- p.m. fixed each.

2. Research Scholarships in all the subjects will be for a period of two years in the first instance.

Essential

First or high second class Master's degree in the relevant subject with bright academic record and aptitude for research.

Desirable

Research Scholars in Commerce & Business Management

First or high second class MBA or M.Com. or M.A. in Economics/Operational Research/Labour and Social Welfare/Social work with specialisation in Labour Relations and Personnel Management/Master's Degree in Industrial Management.

Research Scholars in Central Asian Studies

Master's degree as mentioned in essential qualifications should be in the subject of History and knowledge of History of China, Japan, Tibet and Central Asia.

Working knowledge of Chinese/Tibetan/Russian

Research Scholar in Statistics

The candidates who have appeared in the final exam (M.A./MSc.Statistics) of April/May, 1977 and hope to get good position may also apply. The Department has facilities for research in the following areas:

- (i) Multivariate Analysis.
- (ii) Non-parametric inference.
- (iii) Combinatorics and Design of Experiments.
- (iv) Stochastic Processes.

Research Scholar in Public Administration

- (i) Knowledge of research methods and Statistics
- (ii) Teaching or research experience.

Research Scholar in Pharmaceutics

Candidate should be first class or second class M. Pharm.

Research Scholar in Pharmacognosy

Candidate should be first class or second class M. Pharm. with specialisation in Pharmacognosy OR first class M.Sc. in Botany.

Research Scholar in Pharmaceutical Chemistry

Candidate should be first class or

second class M.Pharm. with specialisation in Pharmaceutical Chemistry OR first class M.Sc. (Organic Chemistry).

Research Scholar in Botany

Some past experience of doing research in any discipline of Botany.

(J) Research Scholar-cum-Demonstrators (Rs. 400/- p.m. fixed each)

Biochemistry-3 Chemistry-1.

Research Scholar-cum-Demonstrator in Biochemistry

First class M.Sc. with brilliant academic record and atleast one year research experience.

Research Scholar-cum-Demonstrator in Chemistry

M.Sc. first class or high second class with specialisation in Inorganic Chemistry.

Note: Research Scholar-cum-Demonstratorships in both the subjects will be for a period of two years in the first instance.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees may, however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of a 'No Objection' Certificate from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the Office of the Finance & Development Officer, Panjab University, Chandigarh by making a written request accompanied with self-addressed stamped envelope of 23 x 10 cms.

UNIVERSITY OF BOMBAY

Centre of Post-graduate Instruction & Research, Panaji, Goa.

Applications are invited for the following temporary posts in the Centre of Post-graduate Instruction & Research, Panaji, Goa:

1. Reader in French
2. Reader in Modern History (with specialization in erstwhile Portuguese Colonies in Asia and Africa)
3. Professor of Economics (with specialization in Development Economics)
4. Reader in Economics (with specialization in Statistics/Econometrics)
5. Lecturer in Economics (with specialization in Regional Planning)
6. Professor of Political Science (with specialization in Development Administration)
7. Reader in Sociology (with specialization in Social Change)
8. Reader in Sociology (with specialization in Sociology of Art and Culture)
9. Professor of Physics (with specialization in Nuclear Radiation Physics applied to Biology)
10. Reader in Physics (with specialization in Nuclear Magnetic Resonance Studies)

11. Lecturer in Physics (with specialization in Electronics Instruments)

12. Professor of Chemistry
and

13. Reader in Chemistry (with the following specialization):

(i) In Industrial Chemistry with specialization in Pharmaceuticals, pesticides or essential oils with a basic degree in Organic Chemistry, Industrial Chemistry or Chemical Technology;

or

(ii) In Inorganic/Physical Chemistry
14. Lecturer in Chemistry (with specialization in Organic Chemistry)

15. Lecturer in Chemistry (with specialization in Physical/Inorganic Chemistry)

16. Reader in Mathematics (with specialization in Applied Mathematics, Fluid Mechanics, Control and Optimization Theory)

17. Lecturer in Mathematics (with specialization in Pure Mathematics)

18. Professor of Marine Science—In any one of the branches in Marine Sciences (excluding Marine Engineering)

19. Reader in Marine Science—In any area of Marine Physical Science including Oceanography

20. Reader in Marine Science—In any area of Marine Biological Sciences

21. Lecturer in Marine Science—In Marine Geology and Geophysics

22. Lecturer in Marine Science—In Marine Chemistry

The grades of the posts are—Professors: Rs. 1100-50-1300-60-1600, Readers: Rs. 700-50-1250 and Lecturers: Rs. 400-40-800-50-950. These scales are likely to be revised as per U.G.C. recommendations.

All the posts carry the benefits of University Provident Fund and Dearness and House Rent allowances at the rates sanctioned by the Executive Council from time to time. A higher starting salary may be given to a person possessing high qualifications. Other things being equal preference will be given to candidates from backward classes. Posts of Lecturers are reserved for scheduled castes and scheduled tribes and will be filled up by appointment of such persons only as shall satisfy the requirements regarding qualifications, experience etc. laid down for the posts, provided however that if no candidates are available from the scheduled castes and scheduled tribes, the posts will be filled up by appointment of duly qualified persons from among other applicants.

The general requirements for the posts are as follows:

Professors & Readers:

(a) A Doctor's degree or published work of an equally high standard; and

(b) consistently good academic record with 1st or high 2nd class (B+) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Plus those additional qualifications prescribed by the University by way of experience etc.

Lecturers:

(a) A Doctor's degree or published work of an equally high standard; and

(b) consistently good academic record with 1st or high 2nd class (B+) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Further details regarding qualifications, teaching experience etc. prescribed for the posts are as under:

The applicants for the post/s at serial—

No. 1:—must have experience of teaching Post-graduate classes and of guiding and conducting research work.

No. 2:—must have specialization in erstwhile Portuguese Colonies in Asia and Africa and must have experience of teaching Post-graduate classes for at least 10 years and guiding and conducting research work in Modern History and must have done independent research work of recognized merit.

No. 3:—must have done independent research work of recognized merit and have considerable experience in guiding and conducting research work. They must have specialization in Development Economics.

No. 4:—must have done independent research work of recognized merit and experience of teaching Post-graduate classes and of guiding and conducting research work. They must have specialization in Statistics/Econometrics.

No. 5:—must have done independent research work of recognized merit. Experience of teaching post-graduate classes and of guiding and conducting research work will be an additional qualifications. They must have specialization in Regional Planning.

No. 6:—must have done independent research work of recognized merit and have considerable experience in guiding and conducting research work. They must have specialization in Development Administration.

No. 7:—must have done independent research work of recognized merit and must have experience of teaching post-graduate classes and of guiding and conducting research work. They must have specialization in Social Change.

No. 8:—must have done independent research work of recognized merit and must have experience of teaching post-graduate classes and of guiding and conducting research work. They must have specialization in Sociology of Art & Culture.

No. 9:—must be scholars of eminence, and must have to their credit independent research work of recognized merit in the area of Nuclear Radiation Physics applied to Biology and must possess experience of teaching post-graduate classes and guiding advanced research.

No. 10:—must have to their credit independent research work of recognized merit in the area of Nuclear Magnetic Resonance Studies and must possess experience of teaching post-graduate classes and guiding advanced research.

No. 11:—must have specialization in Electronics Instruments. They must have published work or research work of recognized merit. Experience of teaching post-graduate classes will be an additional qualification.

No. 12:—must be scholars of eminence and must have to their credit independent research work of recognized merit in the area of Inorganic Chemistry/Physical Chemistry/Industrial Chemistry. Applicants possessing qualifications in Industrial Chemistry should have specialization in Pharmaceuticals, pesticides or essential oils with a basic degree in Organic Chemistry, Industrial Chemistry or Chemical Technology. Applicants must also possess considerable experience of teaching post-graduate classes and guiding and conducting advanced research.

No. 13:—must possess degrees in Inorganic Chemistry/Physical Chemistry/Industrial Chemistry. Applicants possessing qualification in Industrial Chemistry should have specialization in Pharmaceuticals, pesticides or essential oils with a basic degree in Organic Chemistry, Industrial Chemistry or Chemical Technology. They must have a wide background and general competence in the subject, considerable experience of teaching post-graduate classes and guiding and teaching advanced research.

No. 14:—must possess degrees in Organic Chemistry. Experience of teaching post-graduate classes and of guiding and conducting research work will be an additional qualification.

No. 15:—must possess degrees in Physical/Inorganic Chemistry. Experience of teaching post-graduate classes and of guiding and conducting research work will be an additional qualification.

No. 16:—must have specialization in applied Mathematics, fluid Mechanics, Control and Optimization Theory and considerable experience of teaching post-graduate classes or an evidence of 3 years of post-doctoral research of high quality.

No. 17:—must have specialization in pure Mathematics. Experience of teaching postgraduate classes and of guiding and conducting research work will be an additional qualification.

No. 18:—must be scholars of eminence, must have to their credit independent research work of recognized merit and must possess experience of teaching post-graduate classes and guiding advanced research for a considerable period.

Nos. 19 & 20:—must have a wide background and general competence in their respective fields and must have done independent research work of recognized merit, and must possess considerable experience of teaching post-graduate classes and of guiding and conducting research work or must be persons of eminence.

No. 21 & 22:—possessing experience of teaching post-graduate classes and of

guiding and conducting research work will be preferred.

Two copies of the application in the prescribed form, which can be had from the Registrar, should be submitted so as to reach the Registrar, University of Bombay, Bombay-32, on or before 30th July, 1977.

Candidates called for interview will have to present themselves at their own expense.

Canvassing direct or indirect will be a disqualification.

K.S. KOLGE
Offg. REGISTRAR

SOUTH GUJARAT UNIVERSITY
University Campus, Udhna-Magdalla Road,
Post Box No. 49
Surat-395007

Applications in the prescribed forms (in eight copies) are invited for the following teaching posts in the Post-Graduate Departments of the University.

allowance and other benefits like contributory Provident Fund and Gratuity as may be decided from time to time.

Information about the qualification

Sr. No.	Name of the Department	No. of Posts
1.	Public Administration	One Reader One Lecturer
2.	Chemistry	One Reader (Applicants to be qualified in Physical/Organic/Inorganic Chemistry with deep research interest in Dyestuff Chemistry and in Drugs.) One Lecturer
3.	English	Two Readers One Lecturer
4.	Bio-Sciences	One Professor (To be qualified in Marine Biology/Algology/Fishery)
5.	Sociology	One Reader
6.	Business and Industrial Management	One Professor One Reader Four Teaching/Research Associates/Case Analysts in the scale of Lecturer (Professor-Reader are required with specialisation in following areas) (1) Marketing Management (2) Human Relations in Management Studies (3) Economics with Orientation in Management Studies and quantitative Analysis
7.	Physics	One Professor One Reader One Lecturer (Applicants for the post of Professor and Reader should be qualified in Nuclear and/or Particle Physics (Theoretical) and one of whom should be M. Tech./M.Sc. (Tech.) in Electronics/Solid State devices, besides other stipulated qualifications for the post. The lecturer may be qualified in Electronics)
8.	Economics	Two Lecturers
9.	Mathematics	One Professor
10.	Statistics	One Reader
11.	Interdisciplinary in Social Sciences	One Professor (Specialist in Research Methodology and qualified in Economics and/or Sociology)
12.	Education	One Reader (Research experience in Educational Administration and Curriculum Planning)

The Pay Scales are as under:

1. Professor—Rs. 1500-60-1800-100-2000-125/2-2500
2. Reader — Rs. 1200-50-1300-60-1600-Assessment-60-1900
3. Lecturer — Rs. 700-40-1100-50-1300-Assessment-50-1600

In addition to pay the teachers of the University Departments are entitled to draw dearness allowance, house rent

prescribed for each post and forms prescribed for each post can be had from the undersigned on payment of Rs. 7/- in cash or by Postal Order and with self addressed envelope of 23 cm x 13 cm size duly stamped with Re. 0.50 paise. The last date for receipt of the applications is 6-8-1977.

G.A. Desai
REGISTRAR

THE UNIVERSITY OF BURDWAN

Advertisement No. 5

Dated the 8th July, 1977

In partial modification of Advertisement No. 4 dated 28.6.77, it is notified that the post of Reader in Political Science under serial No. 1 is lien-free permanent post and the selected person will be on probation for one year.

Sd/- A.K. Banerji
Registrar

BANARAS HINDU UNIVERSITY

Corrigendum

For all posts of Professors and Readers advertised earlier the basic essential qualification may be read as follows:

"A first or second class Master's Degree in the subject or an equivalent qualification."

For the posts of Lecturers in the Institute of Technology only, the essential qualifications will remain as mentioned in advertisements No. 18 of 1976-77 and No. 2 of 1977-78 and not include "a Doctorate Degree or Research work of an equally high standard."

The last date for the receipt of applications has been extended to Saturday July 23, 1977. Those who have applied earlier need not apply again.

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 12/77-78

Applications on the prescribed form are invited for the following posts of Readers (Plan Posts) in the scale of Rs. 1200 50-1300-60-1900 plus allowances.

1. Reader in — Animal Ecology
Zoology
2. Readers in — One in Applied Cartography with specialisation in Air Photo Interpretation; and the other in Quantitative Methods in Geography.

Qualifications:

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching postgraduate classes and some experience of guiding research.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self addressed envelope of 23x10 cm. Last date for receipt of applications is 8th August, 1977. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

(Jamalur Rahman)
REGISTRAR

**JADAVPUR UNIVERSITY
CALCUTTA-32**

June 30, 1977

The university invites application in the prescribed form for the following posts :—

1. Professor :

- | | | |
|-------------------------------------|---|---|
| (a) Civil Engineering | — | 1 |
| (b) Philosophy | — | 1 |
| (c) Chemistry (Inorganic Chemistry) | — | 1 |

2. Reader :

- | | | |
|--------------------------|---|---|
| (a) Chemical Engineering | — | 1 |
| (b) Philosophy | — | 2 |
| (c) Bengali | — | 1 |

Lecturer:

- | | | |
|------------------------------------|---|---|
| (a) Civil Engineering | — | 1 |
| (b) Chemistry (Physical Chemistry) | — | 1 |
| (c) Philosophy | — | 1 |

Qualifications :

**For all posts except 2 (a) & 3 (a) :
Essential:**

- (i) Research Degree of doctorate standard (relaxable in case of candidates having brilliant academic career and research experience) or published work of equally high standard.
- (ii) Consistently good academic record with at least high second class Master Degree in the relevant subject

For 3 (b) :

- (iii) Candidates should have offered Physical Chemistry as a special subject at the postgraduate level.

For posts 2 (a) & 3 (a) :

Essential:

- (i) High Second Class Master's Degree in the respective subjects.
- (ii) Consistently good academic records.

Experience :

(i) For all posts at 1:

10 years teaching/research/industrial experience (for engineering post) including 5 years teaching experience at the postgraduate level, proven ability to guide research.

(ii) For all posts at 2:

5 years teaching/research/industrial experience (for Engineering post only) including 3 years teaching experience at the post-graduate level (at the undergraduate level for Engineering post).

Desirable :

(i) For all posts of Lecturer: 2 years teaching/research experience.

(ii) For all posts of Reader: Ability to guide research.

(iii) For Professor in Engineering: Corporate membership of professional bodies.

Specialisation :

For post 1 (a) :

Soil Mechanics and Foundation Engineering. Experience of organising laboratory for research & post-graduate teaching.

For post 1 (b) :

Ability to undertake, organise and supervise research in Philosophy of Language, Ethics, Social Philosophy and Theory of Communication.

Reader :

For post 2 (a):

Energy and Mass Transfer/Kinetics and Reactor Design/Petroleum Refinery/High Polymer Engineering.

For Post 2 (b):

Specialisation in Indian Logic and Mathematics/Analytical Philosophy/Modern Logic/Sociology of knowledge/Social Philosophy.

Lecturer:

For Post 3 (a):

Specialisation in Soil Mechanics and Foundation Engineering.

Scales of Pay:

Professor: Rs 1500-60-1800-100-2000-125/2-2500/-.

Reader : Rs. 1200-50-1300-60-1900/-.

Lecturer: Rs. 700-40-1100-50-1600/-.

Last date of receiving application is 30.7.77

Application forms are obtainable from the University Office during working hours on payment of Rs 2/- or by post on payment of Rs. 2/-+ Re. 1/- as postal charges. No travelling allowance is admissible to candidates called for interview. Higher initial salary may be given to really deserving candidates. Those who are in employment should submit their application through proper channel. Choice of the Appointment Board will not necessarily be confined to applicants only. Canvassing in any form will disqualify a candidate.

REGISTRAR

S.N.D.T. WOMEN'S UNIVERSITY

**1, Nathibai Thackersey Road,
Bombay-400 020**

Applications are invited on prescribed forms available from the University Office on payment of Rs. 5 (by money order or in cash) for the following posts, so as to reach the undersigned not later than July 30, 1977.

1. Director of Continuing Education

- (a) A first or second class Master's Degree of an Indian University or an equivalent qualification of a foreign University in Adult Education/Social Sciences/Social Work.
- (b) A research degree of the doctorate standard in any of the above subjects or an outstanding competence assessed from the review of published research carried out.
- (c) About ten years experience in programme planning, administration and teaching.

- (d) A person with experience in community development projects with emphasis on adult/non-formal education will be preferred.

Rs. 1100-50-1300-EB-60-1600+ Admissible Allowances (Total initial emoluments about Rs. 1520).

2. Development Officer

- (a) A first or second class Master's Degree.
- (b) Either a Research Degree of the doctorate standard or an outstanding competence assessed from the review of published research carried out.
- (c) At least five years experience of academic and administrative work in an institute of higher learning or a University department.

Rs. 700-50-1000-EB-50-1250+ Admissible Allowances (Total initial emoluments Rs. 1150).

3. Employment Officer

- (a) A first or second class Master's Degree in Psychology/Personnel Management or in allied field.
- (b) Experience of work related to employment of students and graduates.
Rs. 400-40-720-EB-40-800-50-950+ Admissible Allowances (Total initial emoluments about Rs. 870).

**4. Lecturer in Language Teaching—
PVDT College of Education**

- (a) Consistently good academic record with a degree in English and a first or second class Master's Degree in Languages.
- (b) M. Phil or a recognised degree beyond the Master's level or published work indicating the capacity of a candidate for independent research work.
- (c) A person with a Bachelor's Degree in Education with English as a special method and a Diploma in Linguistics will be preferred. Condition (b) relaxable but person appointed will have to acquire qualification within prescribed period.
Rs. 400-40-720-EB-40-800-50-950+ Admissible Allowances (Total initial emoluments about Rs. 870).

Note: (a) Other things being equal preference will be given to candidates belonging to Scheduled Castes/Scheduled Tribes/Nomadic and other Backward Communities (b) Job specifications should be collected with the application forms (c) Higher start in salary may be considered in exceptional cases (d) Proficiency in English essential (e) Knowledge of Marathi/Gujarati necessary (f) The University reserves its right to relax conditions related to research and experience.

**(Smt.) Kamalini H. Bhansali
REGISTRAR**

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 11/77-78

Applications, on the prescribed form, are invited for the following posts:

1. **Readers in Political Science (two Plan Posts—one each in International Organisation and Political Behaviour).** Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications:

(a) A first or high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) Atleast five years experience of teaching Postgraduate classes and some experience of guiding research.

2. **Reader in Political Science (Plan Post), Women's College.**

Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications:

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) Atleast five years teaching experience of Postgraduate classes and/or five years teaching experience of undergraduate classes.

3. **Reader in Physics, Z.H. College of Engineering and Technology.**

Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications:

(a) First or high second class Master's Degree in Physics of an Indian University or an equivalent qualification; (b) Ordinarily a research degree in Physics of a Doctorate standard or published work of a high standard; (c) Ordinarily five years experience in Physics of Postgraduate teaching or guiding research or of teaching degree classes in Engineering

Desirable:

Specialisation in the field of Theoretical Physics, Solid State Physics or any other branch of Experimental Physics at the research level.

4. **Readers in Mechanical Engineering (2 posts—one permanent and one temporary but likely to become permanent), Z.H. College of Engineering & Technology.**

Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications:

Basic Degree in Mechanical Engineering and seven years experience or Master's Degree with five years experience or Doctor's Degree with two years experience; Two years of the experience should be in teaching in an Engineering institution of degree standard and/or research.

Desirable:

Published research work in reputed journals. Teaching experience to Postgraduate classes; Specialisation in Industrial/Production Engineering/Heat Power Engineering or Fluid Mechanics.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 cm x 10 cm. Last date for receipt of applications is **25th July, 1977**. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

**Jamalur Rahman
REGISTRAR**

GUJARAT UNIVERSITY

Applications are invited in the prescribed form available from the Registrar, Gujarat University, Ahmedabad-380 009 so as to reach him on or before **30th July 1977** for the following posts of Lecturers in the University Schools

in the Pay scale of Rs. 700-40-1100-50-1300-assessment 50-1600:

1. Lecturer in Microbiology One post
2. Lecturer in Computer Science Two posts
3. Lecturer in Geography One post

A copy of the rules governing minimum qualifications can be obtained on request.

The above posts carry Dearness Allowance and other allowances as per the rules of University. The benefits of either Provident Fund and Gratuity or pension will be admissible as per the rules of the University in force from time to time. The candidates selected for the above posts shall have to learn the Gujarati language during the period of probation. Application form can be had on payment of Rs 2/- payable in advance either in cash or by money order or by postal order.

**K.C. PARIKH
UNIVERSITY REGISTRAR**

INDIAN SCHOOL OF MINES DHANBAD-826004.

Advt No. 420006/77

Dated July 7, 1977

The Indian School of Mines, which is 'deemed to be University', invites applications for the following posts:

1. One STA (Electrical) for the Deptt of Engg and Mining Machinery.
2. One STA (Electronics) for the Central Instrument Service Section.
3. One Horticulturist.
4. One SSA/SA (Mine Gas Analysis) for the Deptt of Mining Engg.
5. One TA (Maintenance) for Mineral Engineering Laboratory.
6. One SA (Museum) in the Deptt of Applied Geology.

Pay Scales: STA/Horticulturist: Rs. 550-25-750-EB-30-900/-
TA/SA: Rs 425-15-500-EB-15-560-20-700/-

Besides pay, ISM employees get allowances as admissible to Central Government employees. Total emoluments at the stage of Rs. 550/- currently come to Rs. 763.50 and at the stage of Rs. 425/- to Rs. 590.30. Higher initial salary may be granted to specially qualified and experienced candidates.

Age: Normally not more than 35 years in case of STA and Horticulturist and 30 years for other posts.

Further details and prescribed application forms are obtainable from the Registrar, Indian School of Mines, Dhanbad-826004 on sending a self-addressed envelope of size, 30 cm x 12 cm, affixed with postage stamps of the value of Rs. 2.65 only. Completed application forms should reach the Registrar on or before **30th July, 1977**.

CANVASSING IN ANY FORM WILL BE TREATED AS A DISQUALIFICATION.

**S.K. Bordia
REGISTRAR**

University lews



A CHRONICLE OF HIGHER EDUCATION & RESEARCH AUGUST 1, 1977 80 PAISE



Mr. P.C. Chunder, Union Education Minister, presenting a certificate to a student at the second convocation of the Indian Institute of Management, Bangalore. Looking on is Mr. N.S. Ramaswamy, Director of the Institute.

CLASSIFIED ADVERTISEMENTS

OSMANIA UNIVERSITY Hyderabad-500 007 (A.P.)

Advertisement No. 5/1977

Applications in the prescribed form together with the Registration Fee of Rs. 5/- are invited for the following posts in the University service, so as to reach the undersigned on or before 16-8-1977.

Application forms with full particulars can be had from the Director, Department of Publications & University Press, Osmania University, Hyderabad-500 007 (A.P.) on payment of Rs. 4-50 in person or by Money Order or by a Postal Order UNCROSSED made payable to the Director and by sending a self-addressed envelope (11½X26½ cms.)

S. No.	Subject	Professor	Reader	Lecturer
I. FACULTY OF ARTS				
1.	Philosophy	1	1	—
2.	Marathi	1	—	—
3.	Kannada	—	—	2
4.	Linguistics	—	—	2*
5.	Journalism	—	—	1
II. FACULTY OF SOCIAL SCIENCES				
6.	History	1	—	1
III. FACULTY OF SCIENCE				
7.	Physics	—	2	—
8.	Chemistry	—	2	—
9.	Zoology	—	—	2**
10.	Statistics	1	—	—
11.	Microbiology	1	—	—
12.	Bio-chemistry	—	2	—
13.	Geo-physics	1	2	3
IV. FACULTY OF EDUCATION				
		2	—	4

NOTE : The candidates who have applied in response to the Advertisement No. 4/77 for the post of Professor of Education, need not apply again.

*Posts temporary but likely to be made permanent.

**For one post — specialisation in Fish/Emryology and for the other in Vertebrata Endocrinology is required.

The details of qualifications prescribed in respect of each post including the particular branch of specialisation which is needed and also the preferential qualifications considered desirable will be furnished along with the application forms.

Age : Professors Not above (50) years
Readers Not above (40) years
Lecturers Not above (35) years

Note 1. Age limit does not apply to the employees of this University.

2. Age relaxation can be considered in deserving cases.

3. Relaxation in age to the extent of five years may be granted to candidates belonging to Scheduled Castes and Scheduled Tribes. Certificates in respect thereof is to be attached with the application.

4. The teachers of Affiliated Colleges who have put in at least five years of service in any of the Colleges affiliated to the Osmania University will be given relaxation in age to the extent of five years.

Scales of Pay:

- | | |
|--------------|-----------------|
| 1. Professor | Rs. 1,500—2,500 |
| 2. Reader | Rs. 1,200—1,900 |
| 3. Lecturer | Rs. 700—1,600 |

14% and 4% reservations are made for Scheduled Castes and Scheduled Tribes respectively to the extent of Lecturers only.

duly stamped for Ordinary or Registered post.

Sd/
(B. Ramachandra Reddy)
REGISTRAR

MADURAI UNIVERSITY

No. 4/Adv/77/V

Applications in the prescribed form are invited for the following posts in the Departments of the University.

1. One Reader in English with specialisation in American Literature and/or comparative literary criticism.
2. Two Lecturers in English with specialisation in American Literature or Twentieth century fiction.
3. One Lecturer in MALAYALAM

Scale of Pay

Reader — Rs. 700-50-1250

Lecturer — Rs. 400-40-800-50-950

(The U.G.C. scales of pay will be given on approval by the Government shortly)

Higher starting salary will be offered in deserving cases.

Preference would be given to Scheduled Caste/Scheduled Tribe candidates who are considered fit in respect of Posts of Lecturers.

Those who do not possess at least 50% of marks in their post-graduate course need not apply.

The prescribed form of application and other details can be got from the undersigned on requisition accompanied by (1) a self-addressed envelope

with postage stamps to the value of 0.40 paise affixed thereon and (2) State Bank of India challan for Rs. 5/- payable at Madurai drawn in favour of the Registrar, Madurai University, Madurai-625021.

The last date for receipt of applications is 10th August, 1977.

B. MURUGAN
REGISTRAR

SAMBALPUR UNIVERSITY JYOTI VIHAR: BURLA

Advertisement

No. 19652/Estt. dated the 12-7-77

Applications in the prescribed forms with attested copies of marksheets and certificates of each of the examinations passed are invited for the posts of one Asst. Registrar (Academic) and one Assistant Registrar (Administration).

I. Qualifications:

- (a) A Master's degree in any subject from a recognised University.
- (b) A minimum of two years experience in teaching or administration.

Candidates having a Bachelor's degree from a recognised University with a minimum of 5 years office/administrative experience in an educational institution are also eligible to apply for the post of Assistant Registrar (Administration) only.

II. Scale of Pay:—Rs. 400-40-800-50-950/- (likely to be revised).

Both the posts carry usual Dearness allowance and C.P.F. and Gratuity benefits as sanctioned by the University from time to time.

Five copies of application forms will be supplied from the University office to each candidate in person on cash payment of Rs. 10/-. Candidates who intend to receive their forms by post are required to send (a) crossed Indian Postal Order of Rs. 10/- payable to the Finance Officer, Sambalpur University, Jyoti Vihar, Burla. (b) a self-addressed envelope (23 cm×10 cm) with postage stamp worth Rs. 2.85 affixed to it with the words "APPLICATION FORM FOR THE POST OF ASSISTANT REGISTRAR (ACADEMIC) OR ASSISTANT REGISTRAR (ADMINISTRATION) as the case may be superscribed on it. Money orders or cheque will not be accepted.

The last date of receipt of application in the University Office, Jyoti Vihar, Burla is 20.8.77. All communications should be addressed to the Registrar, Sambalpur University, Jyoti Vihar, Burla, Dist. Sambalpur (Orissa) by designation only.

The candidates will be required to appear for an interview at their own expenses before a Selection Committee. Intimation will be sent to the candidates for appearing at the interview in due course.

The selected candidates must join within one month from the date of issue of appointment order.

Sd/-
(G.P. Guru)
REGISTRAR

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Opinions expressed in the articles and reviews are individual and do not necessarily reflect the policies of the Association

AIU suggests basic changes in educational policy

At the last meeting of the Standing Committee the changing pattern of university structure and control exercised by the State Governments over the affairs of the universities was reviewed. It was recognised that over the last few years government control over universities had increased considerably. There were instances when some of the power earlier exercised by the Chancellor were taken over directly by the State Governments. In a large number of cases, Ordinances had been issued in total disregard of academic opinion in the matter. In regard to financial control also, the State Governments had taken over more and more powers. Surveying the whole scene, the committee recommended as follows:

(i) The whole field of university governance had been surveyed by the Gajendragadkar Committee not so many years ago. Attempts should be made to ensure that the recommendations made therein were followed by the governments both in letter and spirit.

(ii) The principle of interposing the Chancellor between the Government and the University is a sound one and efforts should be made to ensure that the Chancellor acts as an independent authority. In general this should be governed by conventions evolved in this regard. Wherever feasible, constitutional amendments may be carried out.

(iii) It has become necessary to underline the fact that the powers of the Chancellor have been eroded to a considerable degree in recent years. It is therefore necessary to ensure that he continues to exercise those powers which have been traditionally exercised by him.

The committee also considered the constitution of student unions in the universities. It was noted that universities had different practices in this regard and it might not be so easy to bring them into line with one another. There were two principles however which must be affirmed to be of paramount importance and every university should seek to ensure that whatever be the detail of the constitution drawn up for the students union, the following guidelines be observed:

(i) Membership of the union should be optional. Those who wish to join may join and those who do not wish to join should not be obliged to join.

(ii) While elections are an important part of any system of representation, emphasis should also be placed on other methods of selection such as rotation, ex-officio membership and nomination in certain cases.

It was noted that in response to the suggestion made by the Sen Committee, a number of universities had taken up the issue of asking their teachers to evolve a code of conduct for themselves. The situation was highly uneven in this regard as well. Not many universities had been able to finalise such a code. In most cases the teachers were not enthusiastic about this proposal. In certain other cases, legal difficulties had been encountered. Taking the overall situation into account, the committee recommended as follows:

(i) When scales of pay were revised in 1970 in accordance with the recommendations of the Sen Committee, a code of conduct for teachers was to be drawn up. Except for a few universities this has not happened. The problem may be attended to therefore immediately.

(ii) While the general guidelines in respect of the hours of work and such other matters had been indicated in the report of the Sen Committee, the matter required to be concretised further in terms of lectures, laboratory work, extra-curricular activities, and such other matters.

(iii) Experience has shown that refusal to pay remuneration to teachers for examination and invigilation work is creating all kinds of difficulties. It is desirable to reconsider the question in the light

Youth Activities in University

H. S. Sanghvi*

The problems of rearranging and refashioning youth activities in the universities is one of the most vital and most pressing problems facing the educational planners and administrators today. In spite of a sufficiently long and measurable period of about three decades, since the nation achieved independence, precious little has been attempted and accomplished in this channel of educational activities. When large and meaningful endeavours are undertaken at the national level to bring the fruits of independence to the lowest, humblest and the most down-trodden, and gigantic efforts are needed to regenerate national consciousness with a view to secure much needed development, the consideration of the overall role of the youth in such efforts demand utmost urgency and a firm determination to vigorously implement any well-based plan, oriented to the needs of the nation.

It must be realised that there is a general clamour for a new order, throughout the world and there is a great urge for equal opportunity to all to raise the level of existence and enjoy the fruits of life. Nearer at home, there is a tremendous earnestness, to bring about social transformation of the country, accelerate economic development, serve the poor and the needy and strengthen the democratic institutions of the nation on an egalitarian basis. There are all purposeful intentions and genuine aspirations to reduce poverty, illiteracy and unemployment and there are enough potent to indicate that the youth also share these ideals. There is indeed a very great need to countermand frustration, on his part which takes him to head-long plunge into destructive directions and the supreme consideration in devising youth activities will be to effectively deal with such a menacing situation. What is needed is, to imbibe in the youth a philosophy, a purpose, a policy and a programme of being involved in national betterment and making him realise that he has also to play his legitimate energetic, active and more outstanding role in the efforts of national reconstruction. All efforts must be devoted to generate a new ethos amongst the youth where there is a vivid realisation that these are the times of genuine study, intensive research, developing a scientific temper of mind, shedding the spirit of securing simply self-interest without scruples, hard-work, and high ethical standards, a sense of involvement in the national development and feeling that national interests are supreme and above any and all considerations. This is not an easy task and apart from the active steps which may be visualised for action to achieve such objectives, perhaps the first need would be for all these working with the youth, to generate for themselves such an ethos because the youth will learn more by practice than by precept.

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In order to inculcate such a spirit in the mind of the youth of the university, the first step would be to make him feel that those who work with him are keen on bridging the generation gap and that they are working for a helpful partnership in a joint lofty venture. The spirit of meaningful comradeship would ensure much larger success in any endeavour and it needs no argument to state that unless an understanding develops, all efforts may prove abortive. It is not enough to leave such matters to the subordinate officers who probably cannot enthuse the youth in the desired manner. When a significant change in the attitude and behaviour of the youth is sought, the lead shall have to come from the top and those at the helm of affairs, will have to associate themselves with all activities in a more than mere symbolic manner.

Any planning of youth activities will be broadly under two heads, viz., academic and non-academic activities. Academic activities are equally essential under present circumstances because the academic standard of the university youth is undergoing downward trend. When the frontiers of knowledge are continuously expanding, our youth relies more on short-cuts, guides and notes to pass out examinations, which do not witness any significant change, notwithstanding years of discussions and experiments. There may not be an acute problem of 'drop-outs' in the sense, the American Universities experience. Nevertheless, it is very true that there is a very serious problem of absentee students, 'drop-outs' from class lectures and non-attentive student population. Further, the morning colleges, with their obvious limitations of time and atmosphere leave very little scope for proper and intensive study and all these factors are in no small measure, responsible for a declining academic and intellectual growth. The need of the hour, therefore, is to foster and augment academic and intellectual growth of the youth also, giving him tools to develop a scientific temper of mind and reading and research habits. While the old-fashioned lecture system of teaching still persists, and there is nothing on the horizon to indicate that it will go soon in view of every day increasing numbers, active efforts will have to be initiated and vigorously pursued to supplement the poor quantum of knowledge that the youth acquires during his study hours in the class. Seminars, symposia and discussions all in small groups under guidance of able teachers, and organising lecture series of learned speakers at regular intervals will give the necessary philip to the receptive minds of the youth to study further. But, organizing study circles and reading camps will bring far richer dividends, in this direction. In some universities, both these activities, have been outstanding and have enthused the youth in a remarkable manner. Groups of youth, under the guidance of willing and sympathetic teachers gather to gather and give the benefit of their study, turn by turn, to their group mates. Each member has his turn and after the initial talk, an energetic discussion follows. Sometimes such discussions are based on studied, informative and thought-provoking papers or articles in reputed journals. Such studies foster the art and practice of

writing also, which is so woefully lacking today and will be fore-runners for research pursuits in due course of time. They will nurture research attitudes also. Reading camps should, as far as possible, be outside the portals of the premises preferably, to a nearby place under able leadership affording atmosphere and space relief for the campers. A set of well-chosen books, preferably with a pre-determined purpose, provided in the required numbers, will ensure a larger success to the camp. Each camper, may be asked to make his own notes of his study to be exchanged and discussed with others who have also received the same book, with the ultimate purpose of writing his own observations on the book and that will give the reader large benefits. For activating the minds of the youth, for an intellectual exercise, library habits are to be fostered. Obviously, the institute must have an adequate library to meet with the needs of the students. Perhaps, a great need today is the production of studied literature in books and journals in the language of the region because, the use of English, for all practical purpose is definitely diminishing. But mere storing or stacking books in cup-boards or shelves are of no avail unless the teachers lead the students to make their use. This is absolutely essential to ensure a successful library programme. The youth needs a proper guidance with a list of books and journals, initially given by the teacher, in the early part of the year, to be followed by supplementary lists at stated intervals. It will be helpful, if the teacher accompanies the students to the library and demonstrates new books, or articles in journals all to be read, intensively and also how notes of the material so read are to be taken. The art of writing needs a good training and it will be helpful if the university youth gets such a training. However, it is to be accepted that even though skill can be imparted, the urge of writing cannot be thrust upon anybody. Finally, research cells at the university and the colleges are a great need of the day. Our research endeavour needs depth and utilitarian objectives and its quantum on an overall basis is indeed poor. This is primarily so, because by and large, our youths, till graduation and even at post-graduate study do not get an impetus, training and background for research. Regular publication of alumnis' journal if not twice, at least once a year, containing articles and papers written by the alumnis of the university will also be very helpful in this direction. Whatever may be otherwise true, the general condition of our academic pursuits, if studies in a majority of poorly equipped colleges can be considered at all academic pursuits, is indeed very poor and a much larger ground on a planned basis needs to be covered in this direction.

This brief description of the additional activities, required to be undertaken for the University youth in order to equip him with academic and intellectual background for a pursuit of higher objectives and much keener intellectual exercises will, if adopted, be considerably instrumental in removing a lacunae so patently felt at the university level today.

While considering non-academic activities for the youth of the university, two glaring facts become so

very evident. One is the comparatively poor physical structure of the youth, both men and women and their extremely disappointing sports achievements. Much heart-searching has to be done in both these contexts. Each university has a department of sports and sport activities are continued for quite a good part of the year. Even the inter-university competitions in various games are held each year in different parts of the country. Further inter-state competitions and Indian olympic fixtures are a yearly feature. Plenty of money is spent on all these activities. Yet a nation of 600 million people could not win a single gold medal at the Montreal olympics. Perhaps much of the money spent on such competitions are an unplanned and wasteful expenditure. Regular exercises, Vyayams or Akhadas inexplicably out of tune with the modern notions of games, sports and physical fitness. Here the university comes into picture and the time has come when the university must build its sports man and sports woman in a planned and proper manner. With more than adequate expenditure on all types of physical activities, the university youth is far behind his counterpart in many countries of the world. The dire necessity of the day is reorganization of such activities. Let the university prescribe a minimum sports activity for each of its students and let it also undertake planned projects to raise the standards of games, sports, athletics and also the physical fitness of the youth. This country has yet to find out a genuine fast bowler in the game of cricket. The University Board of Sports has to chalk out a plan. The plan should provide for improving standards, and earmark sports activity with vigorous exercise, Vyayam, intensive training and physical fitness. Such activities of the youth will enthuse the youth much more. National supremacy in Hockey was tarnished because no good coaching was provided. Similarly in other sports and games, the nation is far behind the rest of the world and university youth must lead the nation by achieving high standards competing with best world standards. This is one channel of youth activity which demands a de novo approach and energetic implementation of a vigorous plan of action.

Similarly, a new approach is needed in cultural activities too. By and large, the standard of cultural activities is fast falling, and these activities generally denote a tendency to cater to the tastes of the low and base sentiments of the audience, barring a few exceptions. Drama has a fascinating capacity to influence the national trends and can assert itself a great deal as an instrument of social change. This can be done by portrayal of the plays on the stage with plots and matter suitable to the needs of the nation. Further, patriotic songs, and the folk music, can fire the imagination of the people to concentrate on national tasks. Scientific music and classical dance will enrich the woefully backward cultural life of the nation. This is very necessary also because man does not live by bread alone. These are, then the avenues on which the youth activities of the university must make their mark. They will enthuse and help the youth very much. They will also help the nation, particularly the poor and the down trodden

(Contd. on page 412)

Problem of Linkage between +2 and +3 Levels

R G. Misra*

In the new pattern of education of ten plus two plus three it is being visualized that the first degree must be given at the end of fifteen years of education and the standard should be comparable with similar degrees in other countries. This means that our first degree, particularly on the academic side, should reflect a much higher standard than it does at present. There are three possibilities in this regard:

- (i) Upgrade the curricula at all the three—high school, intermediate and degree stages of education in individual disciplines.
- (ii) Let the high school curriculum be what it is, give greater width and depth to the study of disciplines at the intermediate and degree levels.
- (iii) Accepting whatever standard is set for the intermediate level, so widen and intensify the courses at the degree level that the desired objective is achieved.

The other two related issues are:

- (iv) How is plus two on the academic side going to be linked with professional and technical courses like engineering and medicine?
- (v) What would be the linkage of the vocational and technical courses at the intermediate stage with under-graduate academic courses on the one hand and professional and technical courses on the other?

Let us now examine the implications of each of the above possibilities and issues one by one:

- (i) **Upgrading the curricula for all the three stages in individual disciplines:**

The new pattern of ten-year high school has been accepted by most of the states in the country. It has also been, by and large, accepted that there will be no diversification of courses at this stage. There has been a suggestion that the possibility of introducing two level courses in Mathematics may be considered. In Assam they have already introduced two level courses in this subject. In all the other subjects the syllabi will be the same for all the students. If we consider the fact that science as well as social sciences are going to be compulsory for all and also the fact that the total time available to teach these

subjects is going to be almost the same as it used to be for teaching the electives in either group, it is obvious that the same syllabi as are being covered under the electives in individual subjects cannot be covered in half the time. Under science it is proposed to teach physical as well as life sciences to all the students and under social sciences it is proposed to cover History, Geography, Civics, Economics, again for all the students. The reasons for doing so are genuine and quite convincing. Therefore, it would not be fair to expect that it shall be possible to retain the same quantum of knowledge of individual disciplines in the syllabus of science or social sciences. Moreover, general education at the high school level is supposed to be more oriented to life and practical knowledge rather than to the rigours of individual disciplines. The emphasis at this stage has to be on widening the intellectual horizon and equipping the individual with more refined intellectual and practical skills in preference to stuffing the mind with undigested facts and principles related to a particular discipline. Upgrading of curriculum at this stage shall, therefore, be not in terms of mere facts and principles in a particular subject but in terms of greater refinement of intellectual and practical skills and widening the general awareness of students so that those, and they form the majority, do not go in for higher education are equipped with the minimum knowledge and competence so as to be able to adjust to contemporary society and to cope with the challenges of the future.

The next two years are to be devoted to the introduction of the student to a systematic study of the disciplines. Considerable thought is to be given to a re-organisation of the content in different subjects. In the selection and presentation of the content only the essentials need be emphasized and all such facts and principles as are peripheral to the essential core may be included only to the extent to which they can be accommodated without overloading the content to the detriment of the learner. Relevance, worthwhileness and the structure of the discipline should be the major criteria for making the selection of essentials. Some of the content which forms a part of the under-graduate first year may have to be pushed back to the plus two stage.

During the next three years the courses shall have to be made much more intensive than what they are at present. These will have to be articulated with the post-graduate courses which, in their turn, shall have to be further deepened. Then alone it may be possible to raise the standard of our degrees in the international market.

- (ii) **Upgrading the curricula at the intermediate and degree levels:**

In view of the above discussion it is evident that in the new arrangement the study of disciplines will not receive the same emphasis at the high school stage as it does at present under diversified courses of study. Therefore the next five years of education will be crucial in this regard, if at all we are keen to raise the status of university education in the country so as

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to make it comparable with the one in more developed countries. If the foundations of proper habits of mind and body are laid at the high school stage, if the students begin to appreciate the value of learning on their own and if they are able to acquire the necessary skills of learning to learn, it shall not be difficult to stimulate them to learn much more than what they are learning by the end of the intermediate stage at present. This will require a co-ordinated effort by all concerned with developing the curricula at the intermediate and degree stages. In this situation the problem of articulation between high school and intermediate shall not be so serious as that of the linkage between plus two and plus three. Let us accept that the major objective of high school education is not college preparatory and therefore blind application of the downward filtration theory to the high school curricula is not possible any more. With proper insight and careful handling it should not be difficult to find a way out of the situation arising out of reduced time for the study of individual disciplines on the one hand and expecting more advanced levels of our university degrees on the other. In this connection the principle of concentric organisation of the syllabi and similar other principles of curriculum organisation shall have to be examined afresh.

(iii) Upgrading the curricula at the degree level

This possibility is based on an argument like this. Extending the period of general education by two years implies dilution of courses in individual subjects at the high school stage. Since the next two years belong to the school stage and have to be articulated with the high school stage the chances are that the major portion of what was formerly being covered in three years of elective subjects shall have now to be squeezed into two years with the result that in spite of having added one more year to school education the net result in respect of study of individual disciplines may be either the dilution of prevailing standards or at best their maintenance. This implies that if we are interested in maintaining the existing standard of our degrees, there is no need to introduce any substantial modifications in the curricula at this stage except for making minor adjustments to link the first degree with the intermediate curricula. On the other hand if we are keen to upgrade the university education it has to be done at this stage only without any upward push from below. The intention being the latter the task is rather difficult if concentrated on three years of the first degree only. Therefore the most rational approach appears to be to distribute this effort over five years after high school and establish a closer link between the school and the university as suggested under possibility (ii).

(iv) Linkage of academic courses at the intermediate stage with higher technical and professional courses

At present there are two patterns of higher technical education—one of five years after eleven-years of higher secondary education and another of four years after twelve years of school education. In medical colleges, by and large, admissions are made after the

Intermediate or Pre-medical leading to the first medical degree after five years. Admissions to these technical and medical courses are made mostly through selection tests. Now there are eight possibilities in case of engineering institutes giving the first degree after five years of education:

1. Raise the standard of selection tests, cut out one year from the first degree course and yet raise the standard of this degree.
2. Raise the standard of selection tests, cut out one year and maintain the existing standard.
3. Raise the standard of selection tests, maintain the present duration and raise the standard of first degree.
4. Raise the standard of selection tests, maintain the present duration as also the standard of the first degree.
5. Maintain the present standard of selection tests, cut out one year and raise the standard of the first degree.
6. Maintain the present standard of selection tests as also the duration but raise the standard of the first degree.
7. Maintain the present standard of selection tests, cut the duration by one year and maintain the existing standard of the first degree.
8. Maintain the present standard of selection tests as also the present duration and standard of the first degree.

Possibilities (5) to (8) are manifestly absurd and based on the assumption that adding one year to school education is not going to make any difference in the quality of the products of the new system. Nothing can be more unfortunate than this, if at all it happens. What is expected is that there will be a substantial change for the better in the courses at the school stage. Consequently engineering colleges should pitch their selection tests at a higher level than the present one. This will also amount to exerting an indirect pressure on the school system to improve matters. This can happen only under possibilities (1) to (4). Of these, possibility (1) is the most challenging one. This will require a fresh look at the present curricula after the courses for plus two stage are prepared. The human problem arising out of this decision shall have to be looked into with proper understanding so that no teacher is thrown out of job on that score. Possibilities (2) and (4) are to be rejected outright because the need to raise standards in all branches of education is recognized at all hands. Possibility (3) is another good solution provided requisite financial support is available. It is very necessary that our engineering colleges go into this issue immediately and lay down the basic requirements for their upgraded syllabi for the guidance of curriculum workers at plus two stage.

Admissions to engineering colleges with a four-year degree course and medical colleges are even now being held after twelve years of education and, therefore, they are not likely to face any problem of staff being declared surplus. However, in their case as well upgrading of curricula will be necessary.

(v) **Linkage of vocational and technical courses at the Intermediate stage with courses in higher education**

One objective of emphasizing vocational courses at the intermediate stage is to divert about fifty per cent of the students from the academic stream. There can be no quarrel with this objective in so far as it brings education nearer to life and equips our young men to enter some vocation soon after the intermediate. If jobs are ensured many less ambitious students would not go in for college education. Of course, there would be some who may like to come back to the academic stream at the college level or go in for higher technical and vocational education. At present engineering colleges expect a certain level of achievement in science subjects which is reached only in academic courses. In vocational and technical courses there will be greater emphasis on the applied aspects and therefore it will not be possible to impart the same extent of knowledge of pure disciplines through these courses as would be available on the academic side and which would be the requirement for getting admission to engineering colleges. To overcome this difficulty bridge courses may have to be provided, which a student desirous to change the stream from technical to academic or to enter engineering colleges may have to complete before appearing for the selection tests for admission to these colleges or getting admission to science courses on the academic side. Moreover, students passing the intermediate in the technical and vocational stream should not be debarred from appearing at these selection tests, if they so desire. Of course for admission to academic courses where no selection tests are employed it would be necessary to clear the corresponding bridge courses.

Two more points are worthy of consideration, particularly in regard to vocational courses:

(a) Because of the prevailing socio-political atmosphere in the country and vested elitists in education as also the earlier unhappy experiences with regard to vocationalization of school education there is a danger that these courses may again be stigmatized as the ones meant for the rejectees of the academic stream and thereby inferior to them.

(b) These courses may lead into a blind alley.

To dispel these misgivings and to make the vocational and technical courses at the intermediate stage really attractive and worthwhile a number of additional measures shall have to be taken, some of which are listed below:

(a) Provision of advanced vocational courses at the college level well-articulate with the ones at the intermediate level.

(b) Regulation of admissions in keeping with employment opportunities.

(c) Provision of incentives for self-employment.

(d) Keeping wide open the boundaries between academic and vocational courses. This would require a drastic revision in the prevailing approach to curriculum organisation and also breaking down of the artificial dichotomy of technical versus academic institutions.

The above discussion touches just the fringe of the problem of linkage between plus two and plus three. The issue is fairly complex and cannot be resolved in a casual manner on the basis of a superficial analysis of the revised syllabi at the intermediate level. Universities, engineering and medical institutes, Boards of secondary education and the National Council of Educational Research and Training may collaboratively develop curriculum outlines for the intermediate stage. Subsequently the necessary changes in the curricula in higher education may also be effected.

In this fast changing world curriculum revision is a must after every five years or so. It has to be constantly backed by research and developmental effort in curriculum reorganisation. Many progressive institutions imparting higher technical, vocational and academic education are experimenting with new ideas and revising the curricula accordingly. In spite of these laudable isolated efforts, there has been a constant criticism that our courses in higher education are sub-standard, methods of teaching outdated and textbooks a poor imitation of the West. Hardly any attempt has been made to systematise the process of curriculum change through research based developmental activities. At the school stage the National Council of Educational Research and Training, in its own limited way, is trying to influence the school curricula for the better. Whether there is any room for such a machinery at the University level without interfering with the autonomy of the universities is a question worth looking into. The above discussion is puerly theoretical and the logic behind various alternatives proposed is purely based on the writer's experience. How sensible it is requires further probing. In the absence of an appropriate research organisation in this field at the national level there is no possibility of offering any research based alternatives, methods and materials for the consideration of the universities.

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Rural Development and Management Education

Dr. P.C. Chunder, Union Minister of Education, Social Welfare and Culture, delivered the convocation address of the Bangalore Institute of Management. The institute was established about five years ago as a part of the programme initiated by the Government of India to develop management education in the country. It is the third management institute to be established in the country and the first in the south. This also happens to be the first institute established in co-operation with the State Government. The institute has a special mandate to prepare the personnel needed by the Public Sector. In addition to the usual postgraduate programmes, the fellowship programme comparable to the PhD degree and several other programmes dealing with important

basic necessities of life. My party is wedded to the Gandhian ideology in general and to rural development in particular. My government is pledged to rural development as an objective of the highest priority. The most important target of our action are the rural poor; and our developmental efforts will be concentrated on providing them with adequate employment and on ensuring that they will receive at least the basic services in education and health. It is in the realization of this fundamental objective of national development that we need the knowledge of natural and social scientists, skill-building capabilities of thousands of institutions, the dedicated labours of voluntary social workers and members of the bureaucracy, and above all, the enthusiastic involvement of the

at the elementary stage are largely urban-oriented and meant for the children of the middle and upper classes who can attend schools on a wholtime basis. These curricula are therefore not intimately related to the rural environment in which the village children live; and the insistence on full-time education (which causes no problem for children from well-to-do families) is not suited to the rural children most of whom come from poor families and are required to work at home or outside. Even the school vacations are not related to the agricultural seasons and we often close the schools when the children are free and open them when they are busy on the farms. This leads to tremendous wastage and stagnation. At the secondary stage, the vocational element is weak everywhere. But even in the little vocational education we provide at present (for example, polytechnics which are geared to the modern industrial sector), agriculture and the rural industries find only a comparatively minor place. There is little relationship between higher education and problems of rural life. The experiment of 'rural institutes' did not succeed, by the large; and there are very few attempts to provide a type of higher education which would induce the graduates (whether of liberal arts or of engineering and medicine) to go to work in rural areas. In fact, our existing system of secondary and higher education, instead of sending out trained talent to villages, is actually draining a good deal of potential talent from the villages to the cities. That is why Rabindranath Tagore said that the 'growth' of our towns and cities is not like a healthy muscular development of the body, but like the growth of tumours which indicates a disease. If we mean business by rural development, we will have to change all this class and urban bias of the entire educational system and tune it properly to the needs of the rural areas and of the poor masses. This is the basic task of reconstruction to which all educational institutions, from the pre-primary to the university, will have to address themselves in the years ahead.

CONVOCATION

sectors of national life have been initiated.

The Education Minister in his address focussed the problem of rural development in India and its implications for management education. He said that the rural education in India where 80% of the total population lives in villages is of special significance. Rabindra Nath Tagore, who was one of the earliest of our national leaders to initiate work on rural reconstruction, set the right perspective when he said: "Villages are like women. In their keeping is the cradle of the race". Mahatma Gandhi again emphasized the significance of villages and looked forward to a time when our entire land surface would be covered with self-reliant villages, which would be free from poverty and exploitation, and which would also be self-sufficient in at least the

people themselves.

It is the task of the educational system to complete and consolidate the social and economic changes decided upon by the country. When the nation has accorded the highest priority to rural development, it obviously becomes the responsibility of the entire educational system to orient itself to serve the cause of rural areas and the rural people. Unfortunately, the present educational system has yet to be tuned to this concept. It began in urban areas and was essentially meant to meet the needs of the middle and upper classes. In spite of the expansion and improvement made in the last 30 years since independence, it still retains the basic class and urban character and is ill-suited to the needs of the masses and rural areas. For instance, its curricula and methods of teaching

It is against this wider social and educational background that we will have to look at the tasks of management education and take measures to relate it, intimately and effectively, to the problems of rural development. How can this be done?

The first point I want to make is that the tasks of rural development have a large managerial component. For instance, in agriculture, the basic issue is water management along with the management of inputs—like good seeds, fertilizers and pesticides—on one hand and of the output—harvesting, storage and marketing—on the other. On the financial side, whether for agriculture or for cottage industries, it is again the management of funds, especially through the cooperatives, that is the crucial factor. Similarly, we need high levels of managerial skills for running large scale programmes of social services like education, preventive and curative medicine, on housing. Government has proposals to decentralize authority and to transfer real and effective power to a considerable extent to lower levels—the Districts, the Development Blocks and the Village Panchayats—and this programme will succeed only if we can simultaneously generate managerial skills of a high order in public administration in the rural areas. I can easily give other examples, but that is hardly needed. What I have said is enough to show the significance of managerial skills in the programme rural development.

My second point refers to the constraints of the training programmes in managerial education for rural development. In the present system, costs-prestige-good employment go together: that is to say, a training programme which has prestige and leads to good employment is necessarily costly. But once the costs of a training programme are placed at a high level, some socio-economic consequences automatically follow. For instance, because of the high costs, we are able to provide only limited facilities. This leads to a situation where the applicants for admission far outnumber the places available. Therefore we

prescribe high level criteria for admission which inevitably results in the selection of children of urban or well-to-do parents because it is these children that generally do well in examinations. The net result is that the students admitted to these costly and prestigious courses generally come from urban and well-to-do families; they also go back into the same social class after training; and their services are also utilized, by and large, by the upper and middle classes, mostly in towns and cities. The costs of management education are very high, much higher than in several other sectors of higher education. The consequences are therefore similar: the students of management education are few in numbers, and mostly men. They often come from well-to-do families, mostly urban. They get good employment, mostly in cities and towns, and go back to the privileged sector; and their work is also generally of a character which benefits the better off social groups.

I am making this point for one specific purpose, namely, to highlight the fact that the constraints of management in the rural sector are very different. We need large numbers of managers, including women managers, several times more than for the urban or the modern industrial sector. Most of these managers will have to come from the poor and undeveloped rural society itself. They will also have to go back and live in the rural society and the remuneration they will ordinarily get will be austere, in keeping with the standards of rural life. They will however need a very high level of skills because the problems they will have to deal with are extremely complex. The implications of these demands are obvious: we must have a large number of institutions for management education for rural areas, and they must function at higher levels of efficiency with lower costs per student. This is the basic challenge and I look up to you, and to the other Institutes of Management, to devise suitable programmes for this purpose.

My third point is equally important and deals with the kind of skills which management of education for rural development has

to provide. In rural areas, the scope for 'employment' in the traditional sense of a person being engaged to work in a plant or a factory on fixed wages is very limited. But there is far greater scope for two other categories of employment. The first is self-employment where a person works on his own in some trade or industry or production/service function. The second is where a person works as an entrepreneur of small scale industry where he generates employment, not only for himself, but for a few others as well. It is these two categories of employment that have to be emphasized in programmes of rural development. For this we need, not only the creation of the necessary infrastructure of finance, supply of raw material, and marketing, but also the organization of good management education for self-employment and entrepreneurship in the small scale, village, or cottage industries sector.

It should be possible for management educators of this country to pool their resources and talents together and to develop the prototypes of institutions which are needed to train able managers of rural programmes of all types: and in particular, of the cooperative movement which has to become the mainstay of rural financing and development. These institutions will have to admit people of far less formal qualifications but with innate managerial ability. Even the identification of these people is a new and a challenging task for which considerable theoretical and operational work is necessary. The costs of these institutions will have to be kept low but their quality will have to be high. They will have to be trained, not only to work by themselves, but also to involve the people closely and effectively. It will also be necessary to devise sound techniques which they will use to train their trainers so that we ensure high quality of work in the management of all sectors of rural development. If these tasks are attempted on a priority basis within the next few years, the large-scale programmes of rural development which government proposes to launch will have much better chances of success.

Jatti's plea for integral study of man in Universities and Colleges

While presiding over the release of Dr. Kishore Gandhi's book "Issues and Choices in Higher Education", Dr. P.C. Chunder, the Union Education Minister said that education has to play a crucial role in the integration of urban and rural communities as well as in the transformation of the quality of life. The Government is seriously concerned with this problem and is looking forward to the new educational alternatives and strategies for

out of all our children is wrong, educationally, psychologically and socially. There will have to be a greater emphasis on work experience and vocationalisation. A good deal of attention will have to be paid to the planning and organisation of university courses.

It is unfortunate that the broad pattern of university education is still in the nature of an exotic plant. Changes should be introduced on the basis of our own

found useful to the educational planners and administrators in formulating the new educational policy.

Shri B.D. Jatti while releasing Dr. Gandhi's book said that he has empirically maintained that it is perhaps only through the right kind of education that we can transform the quality of life and create a balanced human environment for our teeming millions who live under the spell of deprivation and suffer from the individual and social exploitation and various other economic constraints. Thus the greatest challenge before all of us and especially the educational community is how to improve the impoverished rural environment and rectify the imbalances between urban and rural communities. Our villages have traditionally given the basic strength and stability to this country and are responsible for its unbroken continuity. Rural India needs to be made a richer and more attractive place to live in and to offer better opportunities to its educated youth. The current dichotomy between the urban elite and rural folk has to be replaced by a more meaningful integration of urban and rural communities. Evidently the harmonious development of the rural sector offers the greatest opportunities and challenges to technologists, engineers, doctors, social scientists, educators and policy-makers. In this context it is appropriate to recall the prophetic words of Swami Vivekananda. He said that "so long as the millions live in hunger and ignorance I hold every man a traitor who having been educated at their expense pays the least heed to them." It would also call for a revision of educational priorities, its goals and objectives. The role of education in the modernisation of agriculture, in the organisation of small scale industries, in the decentralisation of political economy and in the generation of new values and attitudes in the rural community is quite crucial. But only the right type of education oriented towards the needs and the aspirations of the rural people can mobilise the productive capacities of the rural environment. It



Shri B. D. Jatti releasing the book of Dr. Kishore Gandhi

improving the rural environment and making it a more richer place to live in.

It is important that education is made more responsive and relevant to the aspirations and needs of the people. The policy regarding 10+2+3 is being reviewed. The entire educational curriculum needs to be modified. In the name of raising standards, the curricula were being increased and made bigger than ever before. The existing educational programme also ignores the large variety and plurality of this country where education to be meaningful has to be closely related to the local environment. The attempt at creating little memory machines

indigenous thinking after taking into account what is happening around the world. We should provide more facilities to strengthen the programme of elementary education, liquidation of illiteracy and equalisation of educational opportunities and transforming the educational system to become a powerful instrument of socio-economic transformation. Indian cultural values should be given a priority in our educational system.

Dr. Chunder said that Dr. Gandhi's book has focussed on these issues. It provides detailed analysis of various components of higher education supported by statistical data which would be

must have the backing of Indian cultural values, symbols and enduring myths. A flash-back at the history of the freedom movement would show that the entire nation movement was built on the solid and qualitatively rich foundations of Indian cultural values. Thus the basic question before us is how to integrate our cultural values in the educational system and structure for creating a valued future and the new merging world orders.

To put it more explicitly, the focus should be on both economic regeneration and spiritual rejuvenation.

The second issue which directly flows from the above argument and is both the cause and consequence of our major societal problems, is how to become an integ-

rated human being in contemporary society. This is an issue which is disturbing many sensitive thinkers. Cutting across extreme specialisation, the new approach must present a total view of life. We must highlight in a critical and creative way some of the perennial values of Indian culture, its integrative, humanistic and progressive ideals for building a cohesive and viable nation. Let me spell-out tentatively some of the broad principles of this approach. Firstly we must know the meaning of life and its purpose. Education is not merely confined to passing of examination nor is it a passport for securing a job but it must help us in discovering the meaning of life. Secondly, we must study man in his totality

and look at his origins, nature, abilities, characteristics, relationship with others and his place in the universe. Thirdly we must study man's relationship with the environment and all the sentient beings. Fourthly, in addition to the history of ideas and the modern science, including science and technology we should include in our courses the science of awareness. Fifth, Indian students must discover the cultural identity of their country and imbibe a love for their motherland and an attitude of sacrifice, devotion to work ethic, service to community and love for humanity. These are some of the issues to which the academic community has to address itself and look forward to a solution after careful research and study.

Youth Activities in University

(Continued from page 405)

whose efforts to come out of their low plight need encouragement and inspiration by such youth activities, amidst them and which will lift them up to experience the bracing climate of cultural renaissance.

There is one more pattern of activity of the youth which the universities must vigorously pursue and that is social service. The need and the scope of such activities hardly need any stress, much less emphasis and this is one type of activity which will greatly meet with the supreme need of the nation. It is not essential that this could be done only through state sponsored NSS activities. Irrespective of them, all university units can adopt a village, plan out a four year plan of development for the adopted village and work in the same village for the entire period continuously. The youth will have thereby involvement and the consequent satisfaction of a participant in the endeavour of national regeneration. The village will be enriched by four years continuous efforts of the youth. There will be a mutual affinity and confidence. The only concomitant is a proper plan of action which can be determined in co-operation with panchayat and district and state government officers, public leaders and social workers. It is experienced by universities undertaking such activities that these agencies lend financial support also for various projects and an energetic and meaningful programme of village service has the potential of a significant transformation of the rural scene within a short period of four years. No further details need be given in this brief paper since they can be worked out by each university and by each of its units. But the problems of the villages are uniform and common almost all over the country and as such a uniform and common programme of action will have a uniform impact of the universities on the villages. Here the youth will experience a great satisfaction from their involvement in such beneficial projects and each university must adopt this youth activity on a very

large scale, without any delay.

A brief reference to holding summer and winter camps of the youth by the universities may also be made. The advantages of camp life are too obvious to need any enumeration. Such camps ought to provide enough scope for physical, cultural, social, academic, intellectual and serviceful activities for the youths. Such camps also make the youth more sturdy, more tolerant and more responsible also. The camps can be financed by colleges, campers, charitable trusts and if possible, state government, youth boards, social service agencies and by the universities themselves. Holding a large number of such camps during vacations or even during long week-ends will completely change the atmosphere of university life and a new wave of enthusiasm and hope and creative outlook will replace the present day gloom, lethargy and inertia on the part of the university youth.

Universities need undertake activities for its youth on a very large scale and the availability of finance is always on a limited scale. This riddle can be solved by a determined effort on either side, viz., the university and financing agency. Plenty of money can be saved for such projects by a strict economy in expenditure on establishment, expenditure on travelling and allowances, telephones, telegrams and posts as well as stationery and furniture and several other items at the university level. On the other hand state government should loose the strings of purse for such nation building and productive activities of the university youth. Perhaps the usually lapsing part of the budgetary grants of each university will be more than adequate for the purpose. Also a tactful effort with proper understanding and perserverance on the part of the university officers to secure additional government grants will serve as a magic key and even if initially, financial difficulties may block some helpful activities ultimately, finance should be available for all good projects. There is no doubt that a good cause rarely suffers because of want of finance, and if there is a will, there is bound to be a way to get things done. □

Bangalore seminar criticises hasty semesterisation

(From our special correspondent)

The Chancellor of Bangalore, Mysore and Karnatak Universities has asked the Vice-Chancellors of the three universities to review the working of the semester system so that necessary corrections or improvements could be introduced from time to time. He assured the students who met him that all genuine difficulties in the operation of the system introduced recently would be looked into and corrective steps would be taken. The students have been demanding scrapping of the faulty semester system for quite some time. The Chancellor pointed out to the students that the system had been widely recognised as a good means of imparting and testing absorption of knowledge. The University Grants Commission was in its favour and it

country's educational requirements. They pointed out that what had been attempted was only a half-hearted endeavour with the main and important features of the system missing. The vital features of the system, according to them, were class-oriented work, internal assessment and continuous valuation. All these, in their opinion, were absent in the system introduced in the universities. The system required a class strength of not more than sixty but this had not been adhered to by the colleges where the average strength of a class was around 170.

Another important feature of the system was reserving a minimum of 30% marks for internal assessment. But as introduced only 10% of marks were reserved

tions". Instead of elevating the standard of education, it pointed out, the system would further lower it. Some of the serious drawbacks of the system were that the total abolition of external assessment in practicals was an unhealthy step and complete dependence on internal assessment as bad as the previous system, though science subjects required a weightage for laboratory experience. Bangalore had given only 10% marks while the new pattern was introduced for the day college students no change was contemplated for those studying in evening colleges and external students and yet all these categories got the same degree and the increased instruction time as a result of the new system left practically no time for a student for co-curricular activities.

BHU provides clinical legal education

The Law Faculty of the Banaras Hindu University has started a programme of clinical legal education which will provide free legal aid to the poor and the weaker section of the society. This programme has also been incorporated in the curriculum of the Bachelor of Law Degree from the current session.

The clinical legal education will provide opportunity to the law students for working with the cases in the courts. At the same time a socio-legal service would also be made available to the poor. Under this programme 25 law final year students and their teachers will contribute to the task of providing legal advice. In addition they will render legal service to the weaker section of the society by way of arbitration, conciliation and if necessary by litigation. The clinic also proposes to organise further programme of community education to promote awareness among the under-privileged sections about their rights under the law.

Prof. R.P. Dhokalia, and other members of the Faculty of Law are taking keen interest in the working of the clinic. A separate unit for the legal aid clinic has been created in the faculty.

CAMPUS NEWS

had been introduced in the universities at the undergraduate level only recently. So it will not be wise to scrap it straightway without giving it a fair trial. The Vice-Chancellor of Bangalore University has also assured the Students' Action Committee that the university would constitute a committee of experts to go into the merits and demerits of the system and the students will also be represented on this committee.

The system was however subjected to sharp criticism by the teachers and students at a recent seminar organised by the Bangalore University unit of the Students' Federation of India. They questioned the validity of the system and its appropriateness in the Indian context and the

for it. Individual and personal attention, the speakers said, was essential for the success of the system. But what they found in the colleges was a big difference in the student-teacher ratio. The decision to introduce the semester system was taken by the Vice-Chancellors and the opinions of the elected representatives of the university bodies such as Academic Council or the Senate were not properly ascertained. So the system had created an "atmosphere of distrust" both among teachers and students.

The Karnataka unit of Akhil Bhartiya Vidyarthi Parishad has also demanded a total review of the semester system as introduced in the State universities. In a resolution it said the system had many "loopholes and contradic-

Foreign collaboration for Madras academic programmes

Dr. Malcolm Adiseshiah, Vice-Chancellor of Madras University said that courses in the university with applied aspect might attract considerable international assistance. The Department of Leather Technology of the University was already getting grants from the UNESCO and the United Nations Development Programme. Unesco was also likely to support the crystallography programme in the department of biophysics. Similarly the World Health Organisation would be helping the postgraduate institute of basic medical sciences. Apart from these programmes, the Madras University has also entered into bilateral assistance arrangements with the United States in respect of the Department of Sociology and Anthropology and with the United Kingdom in respect of the Department of English.

The university is cooperating with the Madurai University in the running of local centres for its open university programme. More than forty affiliated colleges of Madras University would soon provide facilities for opening local study centres on behalf of Madurai University.

Calcutta for 2-year programme

The Academic Council of Calcutta University at its last meeting decided to reintroduce the two-year degree course both for the pass and honours students. The university plans to implement the decision from the next academic session starting in 1978 when the first group of students will successfully complete the 11-12 stage of education. The question of restructuring of the undergraduate degree courses has been under debate for quite some time. Different suggestions were made. One group of academics was strongly in favour of retaining the three-year degree course while the other group favouring the re-introduction of the two-year honours courses was equally vocal. The

matter was referred to the Vice-Chancellor who constituted a committee to consider all aspects of the question. As no satisfactory solution could be found, the matter was finally debated in the Academic Council and the above decision was taken on the basis of a secret ballot.

Mr. Sambhu Ghosh, West Bengal Minister for Higher Education has called a meeting of the Vice-Chancellors of seven universities in the State to discuss the feasibility of reverting to the two-year degree programme in place of the existing three-year degree course. He feels that the universities should follow a uniform pattern of education in the State.

Colleges challenge capitation fee order

The management of four private engineering colleges in Karnataka have moved the High Court regarding the constitutional validity of the recent Government order regulating the admissions and collection of capitation fee in the engineering colleges. Writ petitions have been filed for quashing the government order of June 10, 1977. The Karnataka Engineering Colleges and Technological Institutes Rules 1977 which were promulgated on June 13, 1977 were brought into force from this academic session.

The impugned rules prescribe the maximum intake in respect of each branch of specialisation and quota for all aided and unaided private engineering colleges. The order of the government also specifies the maximum capitation fee that could be collected by the private engineering colleges. The petitioners—Gukula Education Foundation, the Sidaganga Education Society, the Rashtriya Shikshana Samithi Trust and the Manipal Engineering College Trust—have not been receiving any aid from the government but depend on donations from the public, students and their parents for the maintenance of the colleges they have been running. They have complained that the impugned orders have taken away their right to select students of their choice in respect of certain

percentage and even in respect of the remaining percentage the government had imposed restrictions on the receipt of capitation fee and had thus virtually taken over the day-to-day administration of the colleges. The petitioners have further urged that the government orders are unconstitutional and the Court has been asked to declare them as null and void. A prayer has also been made to restrain the government and Director of Technical Education from enforcing them.

Madras Physics Department plans jubilee symposium

The Tamil Nadu Government has provided a special grant of Rs. one lakh to Madras University for its Department of Physics to conduct an international symposium in connection with its silver jubilee celebrations. The symposium would be held in the first week of January 1978. According to Prof. R. Srinivasan, Senior Professor in Physics Department, the symposium would be sponsored by the International Union of Pure and Applied Biophysics, Department of Science and Technology, the Indian National Science Academy, the Council of Scientific and Industrial Research and the Bhabha Atomic Research Centre. Eminent scientists including three Nobel Laureates, Prof. D.C. Hodgkin of the U.K., Prof. Kendrew of Germany and Prof. Ochoa of the USA are likely to participate in the symposium. The National Science Foundation of the USA and the Royal Society of the U.K. were likely to sponsor a few scientists to the symposium.

A Winter School of lectures on 'current trends in biomolecular structure' by visiting experts is proposed for the week immediately following the symposium for the benefit of younger scientists all over the country.

MBA course at South Gujarat Varsity

The South Gujarat University is organising a two-year full-time postgraduate course in manage-

ment leading to MBA degree from this academic session. The programme will be conducted by the Department of Business and Industrial Management. Initially it will be a four-semester course with summer experience of ten weeks between the second and third semesters. The programme would also provide optional papers from the functional areas of Production Management, Marketing Management, Financial Management and Personnel Management. Management of Financial Institutions, Management of Agricultural Institutions, Management of Cooperatives and Management of International Business would be the other areas of study. Every student will be required to complete a project work in any of the functional areas and another project from the sectoral area according to his own choice. The emphasis on these courses would be laid throughout on Management of Public Enterprises and Development of New Enterprises.

Summer institute in Polymer Chemistry

The Sardar Patel University organised a summer institute in polymer chemistry for college teachers during the summer vacations. Of late polymer chemistry has assumed great importance both at the graduate and post-graduate levels. It was therefore necessary to provide instructions to the teachers in theory and training in practicals of this important area of Chemistry. The focus of discussion was mainly on the following:

1. Fundamentals of Polymer Synthesis
2. Theories of Polymer Solutions
3. Configurational Statistics of polymer chain
4. Kinetics of Crystallization of Polymers
5. Thermal properties of Polymers

As many as thirtyfour teachers came from various universities.

University institutions in the Commonwealth

The Association of Commonwealth Universities brings out a number of useful documents every year. The bulletin listing university institutions in the commonwealth is however very popular with the admission offices throughout the commonwealth universities, as it gives not only the names and full addresses of the executive heads of universities but also lists the officers to whom general enquiries could be addressed by students. The total number of institutions listed is 297. The member universities can obtain the bulletin free of cost from the Secretary-General, Association of Commonwealth Universities, 36 Gordon Square, London WCIH OPF.

Another Mysore innovation

Mr. D.V. Urs, Vice-Chancellor of Mysore University proposed to embark on another innovation in the field of education. He intends inviting post-graduate college teachers to launch new courses of study. Each faculty member who offers to launch new courses would be given an incentive of Rs 2,000. Each one of them would get a chance to start new courses once in two years. These would be additional courses and it was entirely left to the students to accept or reject them. In clarification, the Vice-Chancellor said that a Political Science teacher could start a course on Mysore City Government or a philosophy professor on Shintoism. In the traditional system there were no facilities for in-depth studies, though there were people with the necessary intellectual equipment for this type of work. This innovation is necessary as the traditional courses had reached a stage of morbidity and stagnation. He proposes to discuss the scheme at the next meeting of the University Post-graduate Council. The scheme to offer incentive for 100 new courses would initially cost a sum of Rs. two lakhs to the university.

UGC offer to help Calcutta campuses

The University Grants Commission has offered assistance amounting to Rs. fifty lakhs to Calcutta University for acquisition of land for the development of multi-campus provided the matching share is contributed by the State Government.

NCST reconstituted

The National Committee on Science and Technology has been reconstituted with Dr Atma Ram, former Director-General of Council of Scientific and Industrial Research, as its Chairman. The other members are: Dr. F. Ahmed, Commissioner of Geology and Mining in the Jammu and Kashmir Government; Dr. J.P. Chawla of the Chawla Consultancy, New Delhi; Dr. M.N. Dastur of M/s. Dastur and Company; Prof. M.B. Desai, Professor of Agricultural Economics in the University of Baroda; Dr. P.C. Mehta, Director, ATIRA, Ahmedabad; Mr. Shriman Narayan, Chairman, Gandhi Smarak Nidhi; Dr. B. Nag, Managing Director, West Bengal Electronics Development Corporation; Dr. A.K. Saha, Professor of Physics, Institute of Nuclear Physics, University of Calcutta; Dr. H.N. Sharan, Director, Bharat Heavy Electricals Limited; Dr. M.M. Sharma, Department of Chemical Technology, University of Bombay; Dr. D.P. Singh, Vice-Chancellor, Agricultural University, Hissar; Dr. Sukhdev, Director of Research, Malti-Chem, Baroda; and Dr. S. Varadarajan, Chairman, Engineers India Limited, New Delhi.

Following are the ex-officio members: Secretary, Department of Atomic Energy; Director-General, Council of Scientific and Industrial Research; Secretary, Ministry of Communications; Director-General, Geological Survey of India; Director-General, Indian Council of Agricultural Research; Director-General, Indian Council of Medical Research; President, Indian National Science Academy; Secretary, Department of Industrial Development; Chair-

man, Khadi and Village Industries Commission; Director-General, Defence Research and Development Organisation; Secretary, Department of Science and Technology; Secretary, Department of Space; and Chairman, University Grants Commission.

The committee will be an apex advisory body which will formulate and implement the Government policies on science and technology to secure for the people the benefits that can accrue from application of scientific knowledge. It is also required to take measures to ensure proper coordination and cooperation among agencies, organisations and institutions connected with science and technology, both governmental and non-governmental at the national and international levels. It will take measures to improve and expand the quality and quantity of scientific and technological research in industrial undertakings and private institutions. One of the functions assigned to the committee is determination of priorities, including conservation of natural resources, speedy development of rural areas, enhancement of the quality of life of people and fulfilment of their basic needs.

UGC provides special grants for five centres

The University Grants Commission has a scheme through which selected university departments are provided special grants for their development. At present there are thirty such departments recognised by the Commission. The Commission proposes to bring thirty more departments under this scheme.

The department of Physics, University of Rajasthan and that of University of Roorkee, the Department of Chemistry of Allahabad and Sardar Patel Universities and department of Botany of Patna University have been selected this year for providing grants under the special assistance programme. In the case of Rajasthan University the assistance will be for a major research project on material sciences and the grant will be initially for three years. The

assistance in the case of other universities will be up to the end of sixth plan period.

New UGC Associates

According to the recommendations of the University Grants Commission there would be three categories of research associateship A, B and C carrying consolidated monthly emoluments of Rs. 1,000, Rs. 1,200 and Rs. 1,400 respectively. The research associates which are for post-doctoral research will be awarded initially for a period of three years which can be extended by another two years. A certain number of these associateships have been assigned to the universities. The UGC directly awards associateships up to the maximum of fifty at one time. The Commission is also considering a proposal for the award of associateship in Engineering and Technology.

Meanwhile, the UGC has agreed in principle that national associateships up to five per institution may be allocated to specialised research institutions outside the university system for direct awards.

Diploma in strategic studies

The Andhra University has accepted the proposal to start a postgraduate diploma in strategic studies from the current academic session. The university senate at its meeting held recently decided that the diploma be started in the Politics and Public Administration departments. The University Grants Commission has also approved the starting of the courses and has promised to provide adequate grants for this purpose.

A proposal to start a training programme for the deck cadre and engine cadre from the current academic session has also been approved. The courses will be started in the engineering colleges in collaboration with the Dredging Corporation of India. Initially twenty students would be selected for the programme.

New courses at HP Varsity

The Academic Council of Himachal Pradesh University at its meeting held recently approved the proposal for starting Master's courses in Sociology, Geography, Public Administration, Ancient History, Culture and Archaeology, diploma in journalism, diploma in foreign languages and coaching classes for competitive examinations. A suggestion for starting a short course of three months in education technology for the benefit of teachers was also accepted.

In the medical faculty the Council approved the proposal for starting diploma courses in anaesthesia, radiology, obstetrics and gynaecology, paediatrics, ENT and V.D.

PU teachers urge protection

A sizeable number of Patna University Teachers have urged the university authorities to provide adequate security during the invigilation work in view of the growing lawlessness and alleged show of force by the examinees.

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Rural orientation for science plan

The science and technology plan is likely to be revised to give special emphasis to rural development.

The newly constituted national committee on science and technology has taken up the work of drafting a technology policy statement to emphasise the role of technologists and small technicians in the implementation of science and technology plan. Dr. Atma Ram, Chairman of the committee, said in New Delhi that the technicians had been ignored all these years. They were the key to village development and so needed encouragement. He said that instead of going in for sophisticated science on a large scale, simple science which will increase production and productivity of village technician and artisans will be emphasised in the proposed revised science and technology plan.

The Department of Science and Technology has already selected twenty districts for rural development. The committee will soon examine the projects proposed to be taken up in these districts to give them proper policy orientation. The proposed technology policy statement will rectify this lacuna so as to make them an important link in production process. The Gandhian objectives of achieving village Swaraj could be achieved only if these people are given recognition and status along with other scientists. For this, basic education had to be reintroduced on a large scale in the rural areas to provide employment to the educated youth. Technology education institutions should be linked to actual production centres so that students earned a living as they received training.

Dr. Atma Ram said that it was not the eminence in science that contributed to rise in production and economic strength of a nation but proficiency in utilising technology to increase production. Britain in spite of having larger number of noble laureates was lagging behind Japan in production.

Basic changes in educational policy suggested

(Continued from page 403)

of experience gained. The occasion should also be utilised for ensuring that the code of conduct is drawn up in a concrete and detailed form.

(iv) The code of conduct should be uniform for all universities. If there are variations it would create all kinds of problems. While reconsidering the question at this stage this aspect of the problem should be given special attention.

(v) An important part of the proposed code of conduct should be to ensure that the work of every single teacher, including professors was periodically assessed in terms of his/her output, consistency, quality, and his/her own intellectual growth. In this connection the committee strongly suggested that no professor should be appointed on a permanent basis. Instead all professors should be appointed on contract to be renewed every five years. In the situation as it prevailed in the universities today, nothing was more important than to ensure that the quality and performance of professors was satisfactory in every way. This proposal was expected to go a long way ensuring higher standards of performance.

(vi) For obvious reasons such a code of conduct should be drawn up by a committee consisting of vice-chancellors, educationists and teachers.

(vii) It needs to be emphasised that a code of conduct is different from service conditions. Hours of work and such other matters, for instance, come more under the category of service conditions rather than a code of conduct. While reconsidering the issue this aspect may be given due attention.

The report of the Planning Commission on the study of the pattern, procedures and policies of government grants to the institutions of higher education was also considered. The following suggestions were made.

(i) A system of incentive grants should be adopted. In seeking to determine the basis of the grant, results obtained in the college should not be the sole criterion. Other aspects of work, such as, interest in other activities, particularly sports, NCC, NSS, faculty improvement programme, intensive use of the library and the atmosphere for work and commitment to quality should also be given due weightage. Concretely speaking, something like 25% of weightages should be given to these various items of activity.

(ii) The committee was not in favour of regional offices of the UGC. It was felt that this would impede decision making rather than expedite it.

(iii) The committee was not in favour of state level UGCs for the present. While in theory, there was a good case for such a step, in actual practice the experience so far had not been very happy. The matter may be re-examined however after some time.

(iv) In most universities fees had remained stationary for the last 30-40 years. Meanwhile the value of money had depreciated greatly. There was a good case therefore for increasing the fees by something like 50%.

At the same time however it was important that more scholarships should be made available to poor students, particularly to women and members of backward communities. It was equally important to streamline the procedure for grant of scholarships. In quite some cases decisions were taken late or payments were unduly delayed. This caused hardship to students and should be avoided.

(v) The committee was not in favour of making postgraduate education exclusively the responsibility of the UGC. Because of the size of the country this would lead to excessive centralisation and create problems. The proposal to make education a concurrent subject was likely to involve the Centre in a greater measure of responsibility and this was likely to prove helpful as far as post-graduate education was concerned. □

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Dhar, Bani. A study on the personality factors and child rearing attitudes of the parents of schizophrenics. University of Calcutta.
2. Sinha, Kedar Prasad. A comparative study of recidivist and non-recidivist criminals. Bhagalpur University.
3. Veena Mohan. Angle-of regard terrain cues and intensity of light as determinants of moon illusion. Meerut University.

Anthropology

1. Basu, Mahadebprasad. Five muslim groups of Calcutta: A study of their somatic types and affinities. University of Calcutta.
2. Dey, Kripa Sindhu. Measurement of human fertility in Assam. University of Gauhati.
3. Ghosh, Bibhutibhusan. Socio-economic correlates of fertility of Angami women. University of Calcutta.
4. Goswami, Binod Behari. The Mizo unrest — A study of politicisation of culture. University of Gauhati.

Sociology

1. Bhu Dev Singh. Alienation among factory workers with reference to factories in Meerut District. Meerut University.
2. Masihi, E.J. Trade union leadership in textile industry of Ahmedabad. Gujarat University.
3. Sharma, Surjan Singh. Continuity, discontinuity, replacement and action-set of power-position holders in rural area. Meerut University.

Political Science

1. Deshpande, Jayashri. U.S. policy in Indonesia during the Eisenhower administration. Jawaharlal Nehru University.
2. Fazli, Manzoor Ahmed. Socialist ideas and movements in Kashmir from 1919-1947. University of Kashmir.
3. Gupta, Madhu, B. The role of State Governors in India, 1951-72. Meerut University.
4. Har Sharan Singh. Emerging pattern of leadership in panchayat raj: A study of Saharanpur District in Uttar Pradesh. Meerut University.
5. Jain, Ranvir Singh. A relation between the Secretary of State for India and the Governor General of India in Council, 1858-1919. D. Litt. Vikram University.
6. Khare, Madan Mohan. The economic and social council of the United Nations at work. Vikram University.
7. Ravishankar Singh. Bharatiya ganrajya main rajyapal (Hindi). Awadhesh Pratap Singh University.
8. Sinha, Shantha. Maoists in Andhra Pradesh. Jawaharlal Nehru University.
9. Smadhiya, Narender Kumar. Bharat mein rajya karyapalika ke opcharik evam vastawik pramukhon ke bhoomika tatha sambandhon ka alochanatmak adhyayan (Hindi). Vikram University.

Economics

1. Adhoni, Mohammed Abbas Abdur-Rab. Absenteeism in the selected industries of Karnataka State. Karnatak University.
2. Chavda, V.K. The study of some aspects of industrial estates programme with special reference to Gujarat. Gujarat University.
3. Chawla, Krishan Lal. A cost benefit analysis of mass rapid transit system for Delhi. Meerut University.
4. Dev Raj. Shipping and shipbuilding industry in India since 1947. Meerut University.
5. Dixit, Devender Kumar. Uttar Pradesh main karagar udyogon ka arthik adhyayan (Hindi). Kanpur University.
6. Guha, Sabita. Economic assessment of roads with a case study in West Bengal. University of Calcutta.
7. Kashyap, S.P. Regional input-output models: A case study of Gujarat. Gujarat University.
8. Mehta, S.S. Productivity, production function and technical change in some Indian industries. Gujarat University.
9. Prasad, Asha. Labour in silk industry of Bhagalpur. Bhagalpur University.

10. Sulochana, T. Labour in Indian Railways since 1951. Osmania University.

Education

1. John Pushpita. Some socio-personal attitudes related to high and low academic performance of secondary school leavers. University of Kerala.
2. Patel, Arvindbhai Dahyabhai. To study achievement motive, anxiety performance of the university examination and socio-economic status of student teachers in the colleges of education in the State of Gujarat. Sardar Patel University.
3. Shah, Kishorlal Maganbhai. A study of the characteristics of innovative teachers of secondary schools in the State of Gujarat. Sardar Patel University.
4. Sharma, Pramod Chandra. Developing a course in physics for higher secondary schools. Meerut University.
5. Umrajwala, Virbala Ramesh. Construction and standardisation of reading readiness test for the children of Central Gujarat. Sardar Patel University.

Commerce

1. Agrawal, Ved Prakash. Role of growth centres in industrial development with special reference to Modinagar. Meerut University.
2. Panday, Bachcha Lal. Industrial relations in the non-coal mines of Bihar. Bhagalpur University.

Management

1. Jha, Awadh Kishore. The working of Industrial Finance Corporation of India with special reference to industrial growth. University of Bihar.
2. Jogendra Prasad. A study of the impact of management development programmes in a selected public sector undertaking in India. University of Delhi.

HUMANITIES

Philosophy

1. Safia Bano. Maulana Azad's reconstruction of religious thought in Islam. Osmania University.
2. Sharma, Sangam Lal. Ramcharitmanas aur vedant darshan (Hindi). Awadhesh Pratad Singh University.

Fine Arts

1. Jain, Kamla. Yashodhar-charitra kee sachitra paandolipiyan ke chitron ka ek adhyayan. Meerut University.

Literature

English

1. Kundu, Ranjeeta. Christopher Isherwood as a novelist. Bhagalpur University.
2. Ramanathan, S. Aspects of C.P. snows' novels. Gujarat University.
3. Sinha, Kamta Prasad. The social and philosophical thoughts in the plays and prefaces of G.B. Shah. Bhagalpur University.
4. Surendra Narayan. R.K. Narayan as a novelist. Bhagalpur University.

Sanskrit

1. Bhatt, Naresh Bhagvatishankar. Shri Varah Puran: Ek adhyayan. Sardar Patel University.
2. Dogra, N.K. Rajtarangini: Ek sanskritik adhyayan. Gujarat University.
3. Karunakaran, R. The concept of sat in Advaita Vedanta. University of Kerala.
4. Majumdar, Rani. Asvins in Rigveda. Sardar Patel University.

5. Mukhopadhyay, Sukhamay. A study of the poetry of Kalidas and Shakespeare with special reference to their recognised master-pieces, the Sakuntala and Hamlet. University of Calcutta.

6. Munshi, Kshamaben. Shri Parsvana thacarita Mahakavya of Sri Padmasundra Suri. Gujarat University.
7. Namburi, E. Easwaran. Balaramabharatam: Its contribution to Indian dance and drama. University of Kerala.
8. Soni, Shatrupa. Siddhanta-Lesa-Sara Samgraha: A study. University of Delhi.

Hindi

1. Ahuja, Adarsh. Hindi aur Marathi nirgun-kavya mein Guru ka swaroop aur Mahattva. University of Delhi.

2. Ansari, M.A. Swatantryottar Hindi natak: Kathya aur shilp. Gujarat University.
3. Arya, R.P. Dayanand Saraswati: Jiwani tatha unkee Hindi rachnayan. Bhopal University.
4. Dabas, Risal Singh. Aadikaleen Hindi sahitya ka shabdbhandar. Meerut University.
5. Ganesa, Iyer. M. Aadhunik Hindi aur malyalam kavita mein prem aur soundarya: Ek tulnatmak adhyayan. Meerut University.
6. Goel, Murari Lal. Dwedi-Yugeen-Gadya-Sahitya ke Paripreksh mein Pandit Madhav Prasad Misr ke gadya sahitya ka adhyayan. Meerut University.
7. Goyal, Maya Devi. Padmakar kee bimb yojna. Meerut University.
8. Gupta, O.R. Samasyamulak upanyaskar Bhagavati-prasad Vajpayi. Gujarat University.
9. Joshi, Chandra Kanta. Premchand Parvarti aadhunik hindi upanyas main nayak ka sahitya shastriya vivechan. Meerut University.
10. Kad, Shukla. Hindi Sahitya ke reeti kaal ke pramukh kaviyon ka shringar rus nirupan. Meerut University.
11. Khanna, Savita. Hindi kee madhyayugeen shringar kavya-parampara mein Vidyapati ka yogdaan. Meerut University.
12. Misra, Ravindra Nath. Hindi savi sansthaon ka shodhkarya mein yogdaan. Meerut University.
13. Parashar, Kedar Nath. Hindi ekankiyon mein hasya-vyang: Vishesh kar Dr. Ram Kumar Verma ke ekankiyon ke sandarbh mein. Vikram University.
14. Rohtgi, Mithlesh. Hindi kee nayee kahani ka manovaijanyanik adhyayan san 1955 se 1970 isvi tak. Meerut University.
15. Sharma, Devendra Kumar. Radhaballabh Sampradaya ke kaviyon ka roopvarnan. University of Delhi.
16. Tiwari, Indira. Tulsi sahitya ke darshnik srot. Osmania University.

17. Tripathi, Rajendra Prasad. Kanpur ka adhunik Hindi natya sahitya san 1850 se aaj tak. Kanpur University.

18. Vidula. Bhagwati Charan Verma: Sahitya aur jeevan darshan. Meerut University.

Bengali

1. Nath, Purnendunath. Development of Bengali prose in the context of translation and discourse of law in Bengali. University of Calcutta.

Assamese

1. Origin and Development of old Assamese prose. University of Gauhati.

Tamil

1. Elayaperumal, M. Grammatical notes on sangam literature. University of Kerala.

Telugu

1. Balaraju, R. Sita Ramanjaneya Samvadakavyamu: A critical study. Sri Venkateswara University.

2. Rayanam, G. Rama Krishna. Pingali Surana and his works. Osmania University.

Geography

1. Shrivastava, Prem Chandra. Saharanpur — A study in urban geography. Kanpur University.

History

1. Bhaumik, Rabindranath. The system of moral training of students in Ancient India. University of Calcutta.

2. Chakrabarti, Bhubaneswar. History of Malla Dynasty of Vishnupur from earliest times to 1850 A.D. University of Calcutta.

3. Elizabeth, Merklinger. Indo-Islamic architecture of the Islamic Kingdoms of the Deccan. University of Delhi.

4. Iqbal Jehan Begum. Sultana Raziyyah and her predecessors. University of Calcutta.

5. Shrivastava, Prem Shankar. A study on (nying) Nying-ma-pa-sect. Visva-Bharati.

CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from Periodicals received in AIU Library during July, 1977

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EDUCATIONAL PSYCHOLOGY

Hooper, Richard. "How teachers stop worrying and learn to like computers". *Times Higher Education Supplement* (296); 24 June 77: 10.

EDUCATIONAL SOCIOLOGY

Altbach, Philip G. "In search of Saraswati: The ambivalence of the Indian academic". *Higher Education* 6(2); May 77: 255-75.

Neville, Adam. "Managing things as training in managing people". *Times Higher Education Supplement* (299); 15 July 77: 10.

EDUCATIONAL ADMINISTRATION

Alm, Kent G., Ehrle, Elwood B, and Webster, Bill R. "Managing faculty reduction". *Journal of Higher Education* 48(2); March-April 77: 153-63.

Azad, J.L. "Academic and financial management of higher education". *University News* 15(13); 1 July 77: 344-7.

Bhandari, Arvind. "Autonomous Colleges: A cut above the rest". *Youth Times* 6(8); 8 July-21 July 77: 39,41.

Rood, Harold J. "Legal issues in faculty termination: An analysis based on recent court cases". *Journal of Higher Education* 48(2); March-April 77: 123-52.

CURRICULUM

Mehta, B.V. "Note on the proposed restructuring of courses for the undergraduate programme of the South Gujarat University". *University Affairs* (Delhi) 4; 15 March. 15 April 77: 8-11.

TEACHING AND TEACHERS' TRAINING

Anderson, R.N. "Trends in teacher education". *University Affairs* (Ottawa) 8(5); May 77: 8.

Becher, Tony. "How projects and dissertations are taking over from weekly essays". *Times Higher Education Supplement* (286); 15 April 77: 6.

Ogborn, Jon. "Answer to a cry for help—(Higher education

learning project)". *Times Higher Education Supplement* (296); 24 June 77: 9.

EDUCATIONAL TECHNOLOGY

Portia, D.R. "Educational technology and higher education". *University News* 15(13); 1 July 77: 348-50, 57.

Udgaonkar, B.M. and Ramani, S. "TV in India: Education or entertainment". *Science Today* 12 (i); July 77: 7.

EVALUATION

Lord, Frederic M. "Optional number of choices per item." *Journal of Educational Measurement* 14 (1); Spring 77: 33-8.

Mathur, V.S. "Examination business". *University News* 15(12); 16 June 77: 325, 37.

Mueller, Daniel J. and Wasser, Virginia. "Implications of changing answers on objective test items". *Journal of Education Measurement* 14(1); Spring 77: 9-13.

ECONOMICS OF EDUCATION

Navin, Leo and Magura, Michael. "A price-index for university budgetary decisions". *Journal of Higher Education* 48(2); March-April 77: 216-25.

Rosenzweig, Mark R. "Farm-family schooling decision: Determinants of the quantity and quality of education in agricultural populations." *Journal of Human Resources* 12(1); Winter 77: 71-91.

ADULT EDUCATION

Marriot, Florence. "Educational Media in the third world". *Times Higher Education Supplement* (286); 15 April 77: III.

Thimann, I.C. "Why adult education is a vital lifetime". *Times Higher Education Supplement* (286); 15 April 77: 5.

COMPARATIVE EDUCATION AND

COUNTRY STUDIES

Dahrendorf, Ralf. "Problems of German Universities". *Times Higher Education Supplement* (299); 15 July 77: 5.

"POLITICAL TRANSFORMATION of German universities: Extracts from the report of the International Council on the future of the universities". *Times Higher Education Supplement* (296); 24 June 77: 13.

Ray, Niharranjan. "Stop the tide of graduates". *Youth Times* 6(8); 8 July-21 July 77: 8-9, 11.

CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF DELHI

Advt. No. Estab. IV/43/77

Applications on the prescribed form are invited for the following posts:

S.No.	Department	Designation
1.	Zoology	i. Three Professors (Specialisation: Entomology/Cell Biology/Cytogenetics/Biological Chemistry) (Two for Centre of Advanced Studies). ii. One Reader (Centre of Advanced Studies) One Reader
2	Psychology	i. Eight Readers (One Tempy. but likely to continue) ii. Eight Lecturers iii. One Placement Officer
3	Faculty of Management Studies	Two Lecturers (Specialization: Pali for one post) One Lecturer
4.	Buddhist Studies	One Lecturer (Tempy. upto 17.8.1978)
5.	Mathematics	i. One Lecturer in Manipuri ii. One Lecturer in Kannada iii. One Lecturer in Marathi
6.	Operational Research	i. One Lecturer in Italian ii. One Lecturer in Spanish iii. One Part-time Lecturer in Russian
7.	Modern Indian Languages	iv. Three Senior Technical Assistants (one each in Russian, French and German languages) Two Lecturers (Tempy.) One Lecturer (Tempy. upto 31.10.1978) One Lecturer (Tempy. but likely to continue) Two Lecturers
8.	Modern European Languages	i. One Lecturer ii. Two Compilers (for Bilingual Urdu-Hindi Dictionary Project)
9.	History	Four Part-time Lecturers
10.	Botany	One Lecturer in Persian
11.	Sociology	One Public Relations Officer
12.	Geology	
13.	Urdu	
14.	Faculty of Law: Campus Law Centre	
15.	Arabic & Persian	
16.	Central Office	

The Scales of the Pay of the posts are:

1. Professor—Rs. 1500-60-1800-100-2000-125/2-2500
2. Reader—Rs. 1200-50-1300-60-1900
3. Lecturer—Rs. 700-40-1100-50-1600
4. Public Relations Officer—700-40-900-EB-40-1100-50-1300
5. Placement Officer—Rs. 1100-50-1600
6. Senior Technical Assistant—Rs. 550-25-750-EB-30-900
7. Compiler—Rs. 1000 P.M. (Consolidated fixed)
8. Part-time Lecturer—Rs. 500/- P.M. (fixed) for work-load ranging from 3—6 hours per week
Rs. 750/- P.M. (fixed) for work-load ranging from 7—10 hours per week
All posts carry D.A., C.C.A. and H.R.A. as admissible under the rules in force in the University from time to time.

I. ESSENTIAL QUALIFICATIONS FOR

1. Professorships:

A scholar of eminence. Independent published work of high standard and experience of teaching Post-graduate classes and guiding research for a considerable period desirable.

2. Readerships:

Good academic record with first or high second class Master's Degree in

the subject concerned with a Doctor's Degree or equivalent published work.

Independent published work (in addition to the published work mentioned above) with at least 5 years' teaching experience in Honours/Post-graduate classes essential.

3. Lectureships/Part-time Lectureship

(Excepting for posts in the Faculty of Law):

Good academic record with a first or high second class Master's Degree or an equivalent degree of a foreign University in the subject concerned.

(Note: Second Class would mean at least 50% marks in the subject or equivalent grade).

Desirable:

- (i) A Doctor's Degree or Evidence of Research work of equivalent standard in the subject concerned.
- (ii) Teaching experience of Degree/Post-graduate Classes.

Provided if a teacher is not a Ph.D./M.Phil./M.Litt at the time of his/her appointment and does not qualify himself/herself for the award of Ph.D./M.Phil./M.Litt. Degree from a recognised University in a subject which is being taught by him/her within a period of five years from the date of his/her appointment or does not give evidence of research work within that

period in the subject concerned, he/she shall not be entitled to any future increments after the expiry of the said period of five years till such time he/she fulfils the above mentioned requirements.

ESSENTIAL QUALIFICATIONS FOR

4. Placement Officer:

Master's Degree in Business Management, Engineering, Technology, Arts, Science or in any discipline of social sciences such as Sociology, Economics, Commerce, Psychology, Social Work, etc. with familiarity in Business Management and/or Personnel Management.

5. Senior Technical Assistants:

(1) Bachelor's Degree; (2) Advance Diploma in Language concerned with Distinction; (3) Well experience in handling Audio-Visual aids, knowledge of Script writing and have training in a recognised language laboratory; (4) Good knowledge of typing in the language concerned.

6. Compilers:

- (1) At least a second class Graduate with Urdu as main subject;
- (2) Proficiency in Hindi (must have passed Prabhakar) or an equivalent examination in Hindi or published work in Hindi;
- (3) Considerable experience in lexicographical work.

7. Public Relations Officer:

A Second Class Master's Degree with Diploma in Journalism and experience of journalism and publications/public relations work.

8. Part-time Lectureships in Law:

Good academic record with First or high Second class Bachelor's or Master's Degree in Law, practice at the Bar for at least 5 years of which at least 3 years should have been in the Trial Courts. Previous teaching experience desirable but not essential.

Note: Part-time teachers may be appointed initially for a period not exceeding one academic year which could be renewed after each academic year with the total tenure of appointment of an incumbent not exceeding 5 years.

II. SPECIAL/DESIRABLE QUALIFICATIONS FOR:

1. Professorships in Zoology:

Specialisation and research experience in any one of the following fields: Entomology, Cell Biology—Cytogenetics, Biological Chemistry.

2. Readership in Zoology:

Specialisation and research experience, as evidenced by publications, in any of the following disciplines:

Cell Biology, Endocrinology, Entomology, Fishery Biology, Developmental Biology, Animal Physiology.

3. Readership in Psychology:

Specialisation in Experimental Psychology.

4. Readerships in the Faculty of Management Studies:

Candidates with Master's Degree in

Business Management, Engineering, Technology, Mathematics or other field of Social Sciences such as Economics, Commerce, Psychology, Sociology, etc. with specialisation in one or more of the following areas:

Business Policy, Management Concepts, Management Information System, Materials Management, Marketing Management/Financial Management/Management Accounting, Economic environment of Business, Personnel Management and organisational Behaviour,

and with consultancy/practical executive experience in a business or an industrial organisation will be given preference. Familiarity with case methods of instruction, advanced training in modern methods of teaching in management are desirable.

Following are the specific requirements for the posts of Readers in the various subject areas:

- (a) **Business Policy/Management Concepts:**
Experience of teaching Business Policy Course through case methods and/or practical experience in the area of corporate planning.
- (b) **Management Information System:**
Teaching experience in the subject area in addition to practical/consulting experience in the application of MIS in different functional areas of Management.
- (c) **Materials Management:**
Specialisation in the subject area and/or consulting experience in the application of quantitative methods to materials management.
- (d) **Marketing Management:**
Research and/or practical experience in Marketing Research/Advertising Management/Application of Quantitative Methods in Marketing Management.
- (e) **Financial Management/Management Accounting:**
Teaching experience in the subject area and advanced research in Public Utility/Hospital Accounting will be preferred. Candidates with Chartered Accountancy/Cost Accountancy qualifications may also apply.
- (f) **Economic Environment of Business:**
Teaching experience at the Post-graduate level in the subject area and advanced research in Applied Macro-Economics. Knowledge of Econometrics and Public Enterprises Management will be additional qualifications.
- (g) **Personnel Management/Organisational Behaviour:**
Experience of conducting executive development programmes, practical/consulting experience in selection techniques and manpower planning and/or

advanced research and training in Applied Behavioural Science.

5. Lectureships in the Faculty of Management Studies:

Master's degree or an equivalent degree of a foreign University in Engineering, Technology, Business Management, Mathematics or other field of Social Sciences such as Economics, Commerce, Psychology, Sociology, etc. with specialisation in any one or more of the following areas:

Business Policy, Production Management; Management and Computer; Marketing Research; Financial Management; Project Management; Materials Management; Business and Government or Management Accounting, Personnel Management.

For persons specialising in Financial Management or candidates with Chartered Accountancy or specialisation in Cost Accountancy will be given preference.

Candidates with consultancy/executive experience or with teaching experience in Post-graduate programmes in Business Management will be given preference. Familiarity with the case method of instructions, training in modern methods of instruction in management training abroad in the field of Management will be additional qualifications.

6. Placement Officer:

A person having industrial background or the knowledge of working of private and/or public undertakings or educational institutions with special reference to placement and training work will be given preference.

7. Lectureships in Buddhist Studies:

- (i) **For One Post:** Ability to teach Pali through the medium of English and/or Hindi.
- (ii) **For Second Post:** Sufficient knowledge in Buddhist philosophical texts in Sanskrit and Pali, and teaching experience either in Buddhist Sanskrit, Pali or Tibetan. Should also be able to teach the subject in English and Hindi.

8. Lectureships in Kannada and Marathi:

- (i) Fluency in English and/or Hindi;
- (ii) Training and experience in Comparative Literature.

9. Lectureship in Italian

Ability to speak correct Italian; Experience of teaching Italian for 2 years desirable.

10. Lectureship in Spanish :

Evidence of published work/advanced studies or experience of teaching degree classes for not less than two years' and ability to speak correct Spanish/and well conversant with audio-visual aids and language laboratory.

11. Part-time Lectureship in Russian:

Ability to speak correct Russian.

12. Senior Technical Assistants:

- (i) Some experience of handling books in Foreign languages or experience in documentation/publication work.
- (ii) Good knowledge of typing foreign languages other than that con-

cerned. (iii) Candidates will have to appear in written test in the language concerned.

13. Lectureship in History:

Specialisation in (i) Modern Indian History; (ii) Medieval Indian History.

14. Lectureship in Botany:

Specialisation in Development Botany.

15. Lectureship in Sociology:

Specialisation in research methods and statistical and survey techniques.

16. Lectureships in Geology:

Teaching and/or professional experience in recognised organisations in any one or more of the following sub-disciplines of Applied Geology: Hydrogeology; Geophysical Prospecting; Mineral Economics; Mining Geology; Mineral Fuels; Photo-Geology; Engineering Geology; Mineral Dressing.

17. Compilers:

Knowledge of Persian, Sanskrit and linguistics desirable.

The prescribed application form can be had from the Information Office of the University either personally or by sending a self-addressed envelope (size 5"X11") with postage stamps worth Rs. 2.55.

Selected candidates will have to produce the original documents relating to their age, qualifications, experience, etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, mark-sheets, published research articles, etc. should reach the undersigned not later than 16th August, 1977.

Note: 1. It will be open to the University to consider the names of suitable candidates who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all posts on the recommendations of the Selection Committee.

2. Canvassing in any form by or on behalf of the candidates will disqualify.

3. Candidates from outside Delhi for teaching posts, called for interview will be paid contribution towards travel expenses equivalent to 1½ single Second Class Rail fare.

4. Those who had applied in response to the earlier advertisement for the posts of Lecturers in History, Management Studies, Operational Research, Mathematics, Manipuri, Kannada, Marathi, Italian, Botany, Sociology, Geology, Urdu, Buddhist Studies and Part-time Lecturer in Russian, need not apply again, but in case they have any additional information to supply, they may do so.

Sd/-

REGISTRAR
DELHI UNIVERSITY

**INDIAN INSTITUTE OF
TECHNOLOGY
KHARAGPUR**

Advertisement No. R/15/77

Applications are invited for the temporary post of LECTURER for the research project 'Feasibility Study on Phased Array Radar Systems including Applications for Missile Tracking and Precision Approach Radar' in the Radar & Communication Centre at I.I.T., Kharagpur (West Bengal). If suitable candidates for the post of Lecturer are not found the vacancy may be filled up by Scientific Officer.

The post is temporary during the continuance of the Project.

Scale of Pay: Rs. 700-40-1100-50-1600/- plus D.A. as admissible.

Age: Preferably between 25 and 38 years.

**Qualifications & Experience
Essential:**

- (i) M.Tech. degree with first class Bachelor's degree in Electronics & Communication Engineering or equivalent.
- (ii) At least two years' experience in research/teaching/professional field.
- (iii) Specialised knowledge in any one of the following:
 - (a) Microwave Antennas
 - (b) Phased array antennas
 - (c) Radar systems.

Application form may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23 cm×10 cm. Applications should reach the Registrar, I.I.T., Kharagpur (West Bengal) by the 16th August, 1977.

**INDIAN INSTITUTE OF
TECHNOLOGY
KHARAGPUR**

Advertisement No. R/16/77

Applications are invited for appointment to the posts of Professor in the Agricultural Engineering and Rice Process Engg. Centre of the Indian Institute of Technology, Kharagpur (West Bengal). Both the posts are temporary and appointment will be made on temporary basis.

Scale of Pay: Rs. 1500-60-1800-100-2000-125/2-2500/- plus D.A. at admissible rates.

Age: Preferably below 50 years.

Qualifications & Experience:

PROFESSOR—(i) Agricultural Engineering Department
(ii) Rice Process Engineering Centre.

Essential: First class Master's Degree or Second Class Master's Degree with Doctorate Degree in Agricultural Engg. with a minimum of 10 years' experience in teaching at post-graduate level in an institution of University standard and research or development work, having specialised knowledge in one or more specified fields.

Desirable: (a) Research publications

in reputed journals. (b) Experience in guiding research. (c) Ability to organise and develop laboratories in the specialised fields.

I. Field of Specialisation (for Agricultural Engineering Deptt. post)

(i) Farm Machinery and Power
(ii) Soil and Water Engineering (iii) Farm Structures (iv) Agricultural Process Engineering (v) Dairy and Food Engineering.

II. Field of Specialisation (for Rice Process Engineering Centre)

Crop Process Engineering with special reference to rice.

Only capable persons with uniformly good academic career, aptitude for teaching Post-graduate and Under-graduate Classes, Research and Development work need apply.

Application form may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23 cm×10 cm. Applications accompanied with an application fee (non-refundable) of Rs. 7.50 (Rs. 1.87 for SC/ST candidates) payable by means of crossed Indian Postal Order to Indian Institute of Technology, Kharagpur at Kharagpur-2 Post Office should reach the Registrar, I.I.T., Kharagpur (West Bengal) by the 23rd August, 1977.

**PANJAB UNIVERSITY
(CHANDIGARH)**

Advertisement No. 16/77

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, by 16.8.1977 along with postal orders for Rs 7.50. Number of post/s is indicated with the subject. Qualifications-Essential and desirable be perused carefully.

(A) **Professors** (Pay-scale: Rs. 1500-60-1800-100-2000-125/2-2500) Ancient Indian History, Culture & Archaeology-1, Economics-1, Philosophy-1, Botany-2, Geology-1 (Geochemistry/Tectonics).

QUALIFICATIONS

Essential

- (i) A first or high second class Master's degree of an Indian University or an equivalent qualification of a foreign University in the subject with bright academic record.
- (ii) Either a research degree of a doctoral standard or published research work of high standard in the subject concerned in the journals of repute.
- (iii) About 10 years experience of teaching post-graduate classes at a University or College level and experience of guiding research.

Desirable

Professor of Ancient Indian History, Culture & Archaeology

- (i) Specialisation in Ancient History or Culture or Archaeology.
- (ii) Good knowledge of Sanskrit.

Professor of Botany

Outstanding meritorious contribu-

tion in any field of Botany, one preferably in Cryptogams.

(B) **Readers** (Pay-scale: Rs. 1200-50-1300-60-1900) Commerce & Business Management-2, Economics-2, Education (including one for evening classes)-2, History (P.U. Evening College, Chandigarh-1, Department of History-2)-3, Punjabi (Temporary-1, Permanent-1)-2, Political Science-1, Sanskrit-1, Sociology-1, Anthropology (Human Ecology/Prehistoric Archaeology-1, Biochemistry (Nucleic Acid-1, Biophysical Chemistry/Molecular Biochemistry-1)-2, Botany (including one in Plant Physiology)-2, Mathematics-1, Microbiology (Immunology-1, Medical Microbiology-1)-2, Pharmaceutical Chemistry-1, Pharmacology-1, Physical Chemistry-1, Organic Chemistry-1.

Qualifications

Essential

- (i) A first or high second class Master's degree of an Indian University or an equivalent qualification of a foreign University in the subject with bright academic record.
- (ii) Either a research degree of doctoral standard or published research work of high standard in the subject concerned in journals of repute.
- (iii) About 5 years experience of teaching postgraduate classes at University or College level and experience of guiding research.

Desirable

Readers in Commerce & Business Management

- (a) Either (ii) above or Graduate and Associate/Fellow of the Institute of Chartered Accountants of India or England having passed the Management Accountancy Examination of the Institute.
- (b) Either (iii) above or five years experience in a business Organisation of repute.
- (c) Specialisation in any one of the following:—
Accounting/Business Economics/
Labour and Industrial Relations/
Banking and Finance/Business Statistics/Business Laws.

Readers in Economics

For one post : Proficiency in the central areas of macro, micro and growth economics, especially in their mathematical aspects.

For second post : Proficiency in the central areas of Econometrics/Macro/Micro/Growth and Development/Theory of Fiscal Economics and Theory of Choice. (Applicants must possess adequate mathematical proficiency in these areas).

Readers in Education

A Doctor's degree in Educational Psychology/Educational Sociology/Curriculum Development. Teaching experience of Educational Psychology/Educational Sociology/Curriculum Development at the Post-graduate level.

Reader in History: (P.U. Evening College: Punjab History).

Readers in Punjabi

- (i) Temporary post: Comparative Philology/History of Punjabi Literature.
- (ii) Permanent post: Research work or published work of an equally high standard in field of Punjabi Fiction or Punjabi Drama or in a significant period of Punjabi Literature.

Reader in Political Science

Either Pakistan Studies or Indian Government & Politics or comparative Politics or Modern Political Analysis and Research Methodology with Statistics.

Reader in Sociology

- (i) Specialisation in one or more of the following fields:
Urban Sociology, Social Stratification, Social demography, family and marriage and sociology of Development.
- (ii) A thorough acquaintance with qualitative methods of research.

Reader in Mathematics

Either a research degree of doctoral standard or published research work of high standard in Applied Mathematics preferably in the areas of Magnetohydrodynamics or Differential equations in journals of repute.

Readers in Microbiology

Doctoral degree in Microbiology, Teaching and Research Experience in Medical Microbiology, Immunobiology and immunochemistry.

Reader in Physical Chemistry

Specialisation in the field of Catalysis or Surface Chemistry.

Candidates who do not possess a Doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their research/published work. Separate application should be submitted for a post in a different Department.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees may, however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the Office of the Finance & Development Officer, Panjab University, Chandigarh, by making a written request accompanied with self-addressed stamped envelope of 23x10 cms.

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

Advertisement No. R/17/77

Applications are invited for the undermentioned posts in the Radar & Communication Centre at I.I.T., Kharagpur (West Bengal).

All posts are temporary during the continuance of the Centre.

Posts:

I. Assistant Professor (Radar & Communication Centre) — 2 posts

Scale of Pay : Rs 4200-50-1300-60-1900 plus usual D.A. as admissible.

Age: Preferably between 30 and 45 years.

Qualifications & Experience

(a) **Essential :** Master's Degree in Electronics and Electrical Communication Engineering or equivalent with Doctorate degree in Microwave Engineering or related field with a minimum of 5 years experience in research and/or teaching.

(b) **Desirable :** (i) Publication in reputed journals (ii) Experience in carrying out independent research (iii) Corporate membership of recognised institution.

II. Lecturer/Scientific Officer (Radar & Communication Centre) — 3 posts

Scale of Pay : Rs 700-40-1100-50-1600 (for Lecturer) and Rs 700-40-900-EB-40-1100-50-1300 (for Scientific Officer) plus usual D.A. as admissible.

Age : Preferably between 25 and 38 years.

Qualifications & Experience for Lecturer

(a) **Essential :** (i) M. Tech. Degree with good academic record in Electronics & Electrical Communication Engineering or equivalent with specialisation in Microwave Engineering or Digital Communication. (ii) Two years' experience in research/teaching/professional field.

(b) **Desirable :** Publication in reputed journals

for Scientific Officer

Essential : (i) M. Tech. Degree with good academic record in Electronics and Electrical Communication Engineering or equivalent with specialisation in Microwave Engineering or related fields. (ii) One year's experience in research or professional field.

III. Junior Research Assistant (Radar & Communication Centre) — 3 posts

Scale of Pay : Rs 425-15-500-EB-15-560-20-700 plus usual D.A. as admissible.

Age : Preferably not less than 20 years.

Qualifications & Experience

(a) **Essential :** Either an M. Sc. Degree in Chemistry/Physics/Mathematics or a Bachelors Degree in Electronics & Electrical Communication Engineering or equivalent.

(b) **Desirable:** Post-graduate diploma, some experience on polymer synthesis and foaming techniques or in electronic computer.

Application forms may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23 cm.x10 cm. Applications

accompanied with an application fee (non-refundable) of Rs 7.50 for posts under category I & II and of Rs 3.00 for posts under category III (Rs 1.87 and Re 0.75 respectively for SC/ST candidates) payable by means of crossed Indian Postal Order to the Indian Institute of Technology, Kharagpur at Kharagpur-2, Post Office should reach the Registrar, I.I.T., Kharagpur by the 30th August, 1977.

JADAVPUR UNIVERSITY CALCUTTA-32

Corrigendum to the Employment Notification

Reference the above employment notification, under specialisation for post 2 (a): add "Combustion Engineering/Chemical Technology / Thermodynamics" and for post 2 (b): Reader of Philosophy: for "Specialisation in Indian Logic and Mathematics" read "Specialisation in Indian Logic and Metaphysics".

REGISTRAR

SPORTS TALENT SCHOLARSHIPS 1977-78

Secretary, Association of Indian Universities, Rouse Avenue, New Delhi-110002 invites applications for award of fresh sports talent scholarships for 1977-78 and renewal of scholarships awarded for 1976-77. Applications on prescribed forms, available from Registrars/Sports Officers of the universities and this Office, should reach the Secretary of the Association before 16th September, 1977.

DIBRUGARH UNIVERSITY DIBRUGARH

Advertisement No. 4/77

Applications are invited for the post of 2(two) Lecturers in the Department of Commerce. In addition to the pay, the posts carry House Rent Allowance, Dearness Allowance etc. as admissible under the rules of the University.

Scale of Pay Rs. 700-40-1100-50-1600 p.m. (Revised).

Minimum academic qualification: (a) Doctor's degree or published work of an equally high standard and (b) Consistently good academic record with First or High Second Class (B+) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable a person possessing a consistently good academic record (due weightage being given to M. Phil or equivalent degree or research quality) may be appointed on the condition that he will have to obtain a Doctor's degree or give evidence of

published work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Specialisation : In transport or taxation will be preferred.

Nine copies of application stating (1) Name in full (Block letters), (2) Father's name, (3) Home address with Police Station, (4) Present address with T.O., (5) Age on 1.3.77, (6) Present occupation and pay, (7) (a) Are you a citizen of India? If so, how? (b) Is/ Was your father a citizen of India, (8) Division/Class showing the percentage of marks secured in each examination along with attested copies of certificates and testimonials accompanied by an Indian Postal Order for Rs. 5/- only, should reach the undersigned **not later than 13th August, 1977.** Reprints of research papers or articles or published works should be attached along with the applications. A certificate about good character from the Head of the Institutions last attended or served must accompany the application for the posts.

Applicants already in service should apply through proper channel but they may submit advance copy of the applications. Candidates called for interview will have to appear before the Selection Committee at their own costs.

Sd/-

D.H. Goswami
REGISTRAR

UNIVERSITY OF INDORE

University House,

INDORE : 452 001

No. Estt/III/(10)/77

Dated the 22nd July, 1977

Advertisement

Applications on the prescribed form obtainable from the University Office on payment of Rs 3/- (in the shape of Crossed Indian Postal Order), are invited for the following posts:—

- (i) Chemistry—one post of Professor.
- (ii) Mathematics—one post of Professor; and one post of Reader.

Qualifications & Pay-scales:

(a) Professor—Rs 1300-50-1500-75-1800-100-2000/-

- (i) A first or second class Master's degree of an Indian University, or an equivalent qualification of a foreign University in the subject concerned.
- (ii) Either a degree of the doctorate standard or published work of high standard.
- (iii) Not less than 10 years experience of Post-graduate teaching and experience of successfully guiding research.
- (iv) For the post of Professor in Chemistry, the candidate should possess specialisation (either by degree or research)

in Analytical/ Theoretical Chemistry.

In the case of a candidate of exceptional merit the Executive Council may, on the recommendations of the Selection Committee and with the prior approval of the Kuladhipati, relax any of the qualifications.

(b) Reader: Rs. 1100-50-1600/-

(i) & (ii) same as for Professor with Post-graduate teaching experience of five years and three years experience of guiding research. Working knowledge of Hindi shall be a desirable qualification. Preference will be given to the persons specialising in Statistics & Probability.

3. The above scales carry with them D.A. and C.P.F. benefits as per University rules. A higher start can be given to deserving candidates.

4. Preference will be given to Scheduled Caste and Scheduled Tribe candidates if found suitable. Candidates already in service should apply through proper channel.

5. Applications (8 copies) duly filled-in and accompanied with crossed Indian Postal Order of 10/- should reach the undersigned on or before **5th September 1977**, the envelope being superscribed as "Application for Professor/Reader in....."

6. The University reserves the right to fill-up or not to fill-up the post and/or to call only selected candidates for interview at their own cost.

REGISTRAR

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 13/77-78

Applications, on the prescribed form, are invited for the post of Accounts Officer in the scale of Rs. 1100-50-1600 plus allowances.

Qualifications: At least a graduate. Ordinarily experience of Accounts including pre-audit work and finance for 10 years of which not less than 7 years service should be in a supervisory capacity "not below the rank of Accountant or Superintendent (Accounts) or Section Officer".

Desirable: Chartered Accountant.

Note: (1) Qualifications may be relaxed in case of candidates with wide experience.

(2) Those who have already applied, need not apply again.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is **20th August, 1977.** Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribu-

tion towards their T.A. equal to one single second class railway fare only.

Jamalur Rahman
REGISTRAR

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 14/77-78

Applications, on the prescribed form, are invited for the following posts:

1. Professor of Organic/Inorganic/Physical/Analytical/Biochemistry. Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications:

(a) A first or a high second class Master's Degree in any branch of Chemistry of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least ten years experience of teaching postgraduate classes and guiding research.

2. Reader in Organic/Inorganic/Physical/Analytical/Biochemistry (Post temporary), Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications:

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching post-graduate classes and some experience of guiding research.

3. Lecturers in Chemistry (Organic/Inorganic/Physical/Analytical/Biochemistry). Two posts—one permanent and one temporary. Scale Rs. 700-40 1100-50-1600 plus allowances.

Qualifications:

(a) A Doctor's Degree or research work of an equally high standard; and (b) Consistently good academic record with first or high second class (B in the seven point scale) Master's Degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

4. Reader in Statistics. Department of Statistics. Scale Rs. 1200-50-1300-60-1900 plus allowances. (V Plan Post)

Qualifications:

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching postgraduate classes and some experience of guiding research.

Desirable:

Research experience in Stochastic Process/Mathematical Programming.

5. Reader in Philosophy (Temporary but likely to become permanent). Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications:

(a) A first or a high second class Master's Degree in Philosophy of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) Atleast five years experience of teaching postgraduate classes and some experience of guiding research.

Desirable:

History of Philosophy/Comparative Philosophy.

Note:

Those who have already applied, need not apply again.

For the post of Lecturers (Sl. No. 3) Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phill or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is 20th August, 1977. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

Jamalur Rahman
REGISTRAR

HIMACHAL PRADESH UNIVERSITY, SIMLA-171005.

'RECRUITMENT BRANCH'

Advertisement No: 3/77

Applications are invited for the following posts:

Agricultural Complex

Department of Entomology—Zoology:

1. Nematologist. Desirable: (i) Ph. D

Nematology (ii) 5 years experience of working with plant parasitic nematodes as evidenced by published papers.

2. Assistant Entomologist. Desirable: (i) Ph. D in Entomology/Zoology (ii) Experience of working with parasitic mites.

3. Senior Technical Assistant. Desirable: Ph. D. Entomology/Zoology.

4. Research Assistant. Desirable: (i) Ph. D Entomology/Zoology (ii) Experience of Beekeeping with reference to Bee enemies.

Department of Soil Science and Agricultural Chemistry:

5. Associate Professor in Survey and pedology/Soil Chemistry. Desirable: Ph. D in Soil Survey and pedology/Soil Chemistry.

6. Associate Professor Chemistry. Desirable: Ph. D in Organic Chemistry and teaching experience in soil organic matter and analytical procedure.

7. Associate Professor Soil Physics. Desirable: Ph. D in Soil Physics.

8. Associate Professor Soil Fertility and Plant Nutrition. Desirable: Specialisation in Radio tractor techniques and micronutrients.

9. Agricultural Engineer.

10. Assistant Professor Inorganic Chemistry. Desirable: Doctoral experience in complex compounds and analytical methods.

11. Assistant Professor Soil Microbiology. Desirable: Ph. D in Soil Microbiology.

12. Assistant Soil Chemist. Desirable: Specialisation in Soil Fertility/Soil Chemistry.

13. Assistant Research Officer. Desirable: Specialisation in radio-chemistry.

14. Assistant Soil Survey Officer. Desirable: Specialisation in Soil Survey in pedology.

15. Lecturer (Physical Chemistry).

16. Lecturer (Soils).

University Teaching Departments:

17. Professor of Business Administration.

18. Professor of Economics.

19. Professor of Mathematics.

20. Professor of Physical Chemistry with specialisation in (i) Non-equilibrium Thermodynamics (ii) Electro-Chemistry (iii) Membrane Phenomenon.

21. Professor of English.

22. Professor of Political Science.

23. Professor of Physics.

24. Professor of Agricultural Economics.

25. Professor of Education.

26. Associate Professor of Business Administration.

27. Associate Professor of English with specialisation in Drama/Comparative literature/Novel/Poetry/Renaissance.

28. Associate Professor of Mathematics with specialisation in Fluid Mechanics, Solid Mechanics, Plasma Physics, Algebra, Analysis, Topo-

logy, Numerical Analysis, Functional Analysis, Differential Geometry.

29. Associate Professor of Linguistics.

30. Associate Professor of Physics with specialisation in Theoretical or Experimental Physics.

31. Associate Professor of Physics (Leave vacancy for one year).

32. Associate Professor of Sanskrit with specialisation in one or more of the (i) Veda (ii) Darshana (iii) Sahitya.

33. Associate Professor of Music.

34. Associate Professor of Education.

35. Associate Professor of Law.

36. Assistant Professor of Business Administration.

37. Assistant Professor of Physical Chemistry (leave vacancy for 2 yrs.).

38. Assistant Professor of Political Science.

39. Assistant Professor of Political Science (leave vacancy for 8 months).

40. Assistant Professor of Psychology.

41. Assistant Professor of Law.

42. Assistant Professor of Education (leave vacancy for one year in the first instance).

University Evening College:

43. Lecturer in Commerce. Desirable: Teaching experience of degree classes.

Directorate of Correspondence Courses:

44. Associate Professor of Education.

45. Associate Professor of Hindi.

46. Associate Professor of Political Science.

47. Associate Professor of Economics.

48. Associate Professor of English.

49. Associate Professor of History.

50. Associate Professor of Commerce. (For the posts at Sl. No. 44 to 50 at least three years experience of teaching post-graduate classes through Correspondence Courses is desirable qualification).

51. Deputy Director/Associate Professor. Desirable: Preference will be given to candidates having administrative experience.

52. Lecturer in Sanskrit.

University Offices:

53. Deputy Registrar.

54. Assistant Registrar.

Construction/Design/Architect/Cells:

55. Executive Engineer (Construction/Design).

56. Assistant Engineer.

57. Assistant Architect.

58. Architectural Assistant—Grade-I.

59. Architectural Assistant—Grade-II.

University Dispensaries:

60. Medical Officer (G.D.O.II).

Pay Scale & Essential Qualifications:

For posts at Sl. No. 17 to 25: Rs. 1500-60-1800-100-2000-125/2-2500-Ph. D or an equivalent degree; five years' post-graduate teaching or five years' teaching of Honours Classes of five years' post-doctoral research in a

University or a Research Institute; and distinguished research work.

For posts at Sl. No. 1, 5 to 9, 26 to 35 and 44 to 51: 1200-50-1300-60-1900.

Ph. D or an equivalent degree; two years' post-graduate teaching or two years teaching of Honours Classes or post-doctoral research in a University of a Research Institute; and distinguished research work.

For posts at Sl. No. 2, 10 to 14 and 36 to 42: Rs. 700-40-1100-50-1600.

(a) Ph.D or an equivalent degree. For published work of an equally high standard in the subject concerned; and (b) having consistently good academic record with First or High Second Class (B plus) Master's degree in the subject concerned or in an allied subject, or an equivalent degree of a foreign University.

For posts at Sl. No. 3, 4, 15, 16, 43 and 52: Rs. 700-40-1100-EB-50-1300-Assessment-60-1600.

(a) M. Phil or an equivalent degree or published work indicative of capacity for independent research work; and (b) having consistent good academic record with First or High Second Class (B plus) Master's degree in the subject concerned or an allied subject, or an equivalent degree of a foreign University.

Provided that the Executive Council may, if necessary, relax any qualifications at (b) above on the recommendations of the Vice-Chancellor or the Selection Committee, as the case may be, if the research work of a candidate as evident either from his thesis or from his published work is considered to be of a very high standard:

Provided further that a candidate possessing a consistent good academic record may be appointed, if a candidate with qualifications at (a) above is not available or is not considered suitable, on the condition that he will have to attain the required qualifications, within five years of his appointment, failing which he shall not earn future increments until he fulfils the conditions.

In case of selection and appointment to the above posts, the person concerned will have to serve the University at least for a period of two years.

For post at Sl. No. 53: Rs. 1100-50-1600.

Passed the Master's Degree of a recognised University and possesses at least five years experience as Senior Lecturer or District Education Officer or Assistant Registrar in recognised University or in an equivalent position in a Board of School Education or 10 years' experience as Lecturer.

Upper Age Limit: 55 years.

For post at Sl. No. 54: Rs 700-40-1100-50-1300.

Passed the Master's Degree of a recognised University and possesses a minimum of five years' experience as College Lecturer or Block Education Officer or Headmaster of a High School

or possesses like period of experience as Office Superintendent or in an equivalent position.

Upper Age Limit: 45 years.

For post at Sl. No. 55: Rs 800-1600.

(a) Degree in Civil Engineering or equivalent from recognised University/Institution with seven years practical experience—as Assistant Engineer or equivalent. OR

(b) Diploma in Civil Engineering from recognised institution with eight years experience as Assistant Engineer or equivalent post.

Desirable: Experience in Design and Construction of Multi-storeyed buildings.

Upper Age Limit: 40 years.

For post at Sl. No. 56: Rs. 400-1100.

(a) Degree in Civil Engineering from recognised University/Public Institution or equivalent. OR

(b) Diploma in Civil Engineering from recognised Institution.

And

(c) Seven years practical experience in case of diploma holders.

Upper Age Limit: 35 years.

For post at Sl. No. 57: Rs. 400-1100.

(a) Degree or Diploma in Architecture of a recognised University/Institution recognised for recruitment to superior posts in Government of India.

OR

(b) Qualifications included in the schedule of section 14 of Architects bill 1972. And

(c) About two years experience under a qualified Architect.

Upper Age Limit: 35 years.

For post at Sl. No. 58; Rs. 300-25-600.

(a) Degree or Diploma in Architecture of a recognised University/institution recognised for recruitment to superior posts in Govt. of India. OR

(b) Qualifications included in the Schedule of Section 14 of Architects bill 1972. OR

(c) Three years diploma in Architectural Assistantship with three years experience on the post of Architectural Assistant Grade-II or equivalent under qualified Architect.

Preference will be given to candidates having qualifications mentioned under (a) and (b) above.

Upper Age Limit: 30 years.

For post at Sl. No. 59: Rs. 250-450.

(a) Degree or Diploma in Architecture or having sat for final examination of a recognised University/Institution recognised for recruitment to superior posts in Govt. of India. OR

(b) Having sat for the final examination of qualifications included in the schedule of section 14 of Architects bill 1972. OR

(c) Intermediate in Architecture from a recognised University/Institution with one year experience under a qualified Architect after qualifying.

OR

(d) Three years diploma course in Architectural Assistantship from the recognised Institution/Board and possess at least two years experience under a qualified Architect after qualifying.

Upper Age Limit: 28 years.

For post at Sl. No. 60: Rs. 400-40-800-50-950. (Likely to be revised to Rs. 400-1100.)

The post is reserved for male candidate and shall have to join his duties at Solan. He will not be allowed private practice, but entitled to non-practising allowance at the rate of 50% of his basic salary.

Essential Qualifications: (i) A recognised Medical qualification included in the first or second schedule or part II of the Third schedule (other than licentiate qualifications) to the Indian Medical Council Act, 1956. Holders of Educational qualifications included in part II of the third schedule should also fulfil the conditions stipulated in Section 13 (3) of the Act *ibid*.

(ii) Completion of compulsory rotatory internship.

(iii) Must be registered under the Central/State Medical Registration Act. **Desirable:** Knowledge of customs, manners and dialects of Himachal Pradesh.

The above scales carry with them usual allowances and benefit of C.P.F./G.P.F. etc. in accordance with the rules of the University.

Higher start in the grade is Admissible on the basis of special qualifications and experience.

Applications should be made on the prescribed form obtainable from the Registrar by sending a self-addressed stamped envelope (size 23x10 cms) and applications complete in all respects together with a crossed postal order of Rs. 7.50 (not applicable in case of those applying from outside India and for post at Sl. No. 59), drawn in favour of the Finance Officer, Himachal Pradesh University, should reach the undersigned by the 20th August, 1977. A person applying for more than one post should send a separate application for each post.

Note: Applicants for the posts in Dir. of Corr. Courses and Univ. Teaching Department in response to our Advt. Nos. 13/76, 15/76, 1/77 & 2/77 need not apply again. They may, however, send additional information, if any. Applicants for the post of XEN in response to Advt. No. 17/75 also need not apply again.

Sd/-

A.S. BAJWA
REGISTRAR

ANDHRA UNIVERSITY

Advertisement

Applications in the prescribed form are invited for the following posts so as to reach the Registrar, Andhra University, Waltair, on or before **13th August 1977**. Each application shall be accompanied by a crossed Indian Postal Order for Rs 10 (Rupees ten only) or a Bank Receipt remitting that amount in the State Bank of India to the credit of A.U. General Account (Ordinary) towards the Registration Fee for the application.

Subject	Professor	Reader	Lecturer
History & Archaeology	1	—	—
Philosophy	1	1	—
Law	1	—	—
Statistics	—	2	—
Bio-Chemistry	—	—	1
			(Temporary)
Marine Studies	—	1	1
Material Handling Systems	1	—	—

Note: The rule of reservation for SC/ST/BC candidates is applicable for the posts of Lecturers only.

Scale of Pay

Professors	Rs. 1500-60-1800-100-2000
Readers	Rs. 1200-50-1300-60-1900
Lecturers	Rs. 700-40-1100-50-1600
Professor of Material Handling Systems	Rs 1100-50-1300-60-1600 (Non-D.A. merged scale. The scale of pay will be revised)

The details of qualifications prescribed in respect of each post including the particulars and precise branch of specialisation which is needed and also the preferential qualifications considered desirable will be furnished along with the application form.

Requisition for the application forms may be made to Sri P. Hanumantha Rao, Deputy Registrar, Andhra University, Waltair, accompanied by a self addressed and stamped envelope and a State Bank of India Challan or Crossed

Indian Postal Order for one Rupee. The University reserves the right to fill or not to fill all or any of the posts. The cover containing the applications should be superscribed as "Application for Appointment to the Post of..."

M. Gopalakrishna Reddy
REGISTRAR

JADAVPUR UNIVERSITY CALCUTTA-32

11th July, 1977

Applications in the prescribed form (priced Re. 1) are invited for award of:

1. Senior Research Fellowship: 2. Value—Rs. 600 (fixed) per month each
2. Junior Research Fellowship: 4. Value—Rs. 400 (fixed) per month each;

under the U.G.C. Programme of Special Assistance to the Department of Philosophy.

Qualification etc.:

For posts at 1: Doctorate degree in Philosophy/in case of traditional scholars possessing Tarkatirtha, Vedanta Tirtha etc. publication of high standard or adequate research experience.

Desirable: Specialisation in Advanced Indian Logic and Metaphysics/Non-standard and Philosophical Logic/Philosophy of Language/Sociology of knowledge.

Age: Below 40 years.

For posts at 2: Master's degree in Philosophy or equivalent with a First Class either in B.A. (Hons.) or M.A. or 55 per cent marks in Both B.A. (Hons.) and M.A. or Tarkatirtha/Vedanta Tirtha / Nyayatirtha / Mimamasatirtha / Vyakarantirtha in Panini (or recognised equivalent titles in Sanskritic Studies).

Candidates should be willing to undertake research in the same fields of specialisation mentioned for post at 1 above except that Philosophy of Mind

should replace Philosophy of Language.

Age: Below 35 years.

Last date for submission of Applications: **8th August, 1977**.

No T.A./D.A. is admissible to candidates called for interview.

REGISTRAR

UNIVERSITY OF RAJASTHAN JAIPUR

Advertisement No. 2/77

Applications are invited (through proper channel in case of those already in employment) so as to reach this office on or before the **20th August, 1977** in the prescribed form available from the Registrar's Office on pre-payment of Rs. 4 (Rs. 3 extra in case required by post) for a post of Lecturer in Persian in the grade of Rs. 700-40-1100-50-1600:

Essential Qualifications:

(a) A doctor's degree or published work of an equally high standard, and (b) Consistently good academic record with first or high second class (B+) Master's degree in relevant subject or an equivalent degree of a foreign University. Having regard to the need for developing interdisciplinary programmes, the degree in (a) and (b) above may be in relevant subjects. Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of a high standard or that his teaching experience is sub-

stantial and of adequate standard, it may relax any of the qualification prescribed in (b) above. Provided further that if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable a person possessing a consistently good academic record (due weightage being given to M. Phil or equivalent degree or research work of quality or teaching) may be appointed on the condition that he will have to obtain a Doctor's degree or give evidence of published work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation: (1) Consistently good academic record means overall record of all assessments throughout the academic career leading to the Master's degree, which should at least be B+ or high second class. (2) While considering the making of any relaxation in the qualifications in respect of any candidate in accordance with the above provisions, it will be ensured that the qualifications so relaxed shall in no case be lower than those which existed prior to the aforesaid qualifications were prescribed, viz; A first class Master's degree in the subject concerned or in allied discipline of Indian or foreign University or a second class Master's degree with at least three years experience of teaching degree classes of accredited research experience of at least three years (preferably a research degree).

Desirable: Knowledge of Modern Persian and of Indo Iranian Cultural relations. Benefit of Provident Fund and other allowances will be admissible as per rules of this University. Canvassing in any form will be a disqualification. Higher start may be given to deserving candidate. In exceptional cases relaxation in the requirement of experience may be made by the Selection Committee at its discretion. Selected candidate is liable to be posted in any unit of the University.

L.P. VAISH
REGISTRAR

GANDHIAN INSTITUTE OF STUDIES, RAJGHAT-VARANASI

Corrigendum to the Advt. No. 1/77-78 which appeared in the columns of this journal of July 1, 1977 Issue

Last dates for receipt of applications for the posts of professors, one each, in Economics, Political Science and Sociology have been extended as under:

From persons residing in India :
August 15, 1977.

From those residing outside India :
August 31, 1977.

Sd/-
REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY, KANPUR, IIT POST OFFICE KANPUR

Advertisement No. 16/77

Applications are invited for the post of Librarian and Deputy Librarian in the Central Library of the Institute in the scale of Rs. 1500-60-1800 (likely to be revised to Rs. 1500-60-1800-100-2000-125/2-2500) and Rs. 1100-50-1600 respectively.

Qualifications for the post of Librarian:

Essential:

First or high second class B. Tech./M.Sc./M.A./M.Com. degree plus a first or high second class Bachelor's degree or Diploma in Library Science with atleast 15 years of experience as detailed below:

OR

Doctorate degree in Science with an excellent academic record evidenced by way of publications of good quality in professional journals of repute with at least 8 years of experience as detailed below:

The candidates must have demonstrated organizational abilities and leadership qualities and must have an understanding of acquisition of foreign books and journals.

Experience:

The number of years of experience indicated above in each case should be in a position of responsibility in an academic or research Library (preferably in a University or Technical Institute of higher education) or with extensive bibliographical activity in the areas of Science and Technology.

Desirable:

1. Everything else remaining same, candidates having basic degree in Science or Engineering will be preferred.
2. Candidates having First or High Second Class Master's degree in Library Science will be preferred.
3. Knowledge of Hindi and of a modern European language other than English will be preferred.
4. Special consideration will be given to experience in modern Library systems and knowledge and/or experience in information science, especially in the use of Computer's for documentation and information retrieval.

Qualifications for the post of Deputy Librarian:

Essential:

First or Second Class B. Tech./M.Sc./M.A./M.Com. degree plus a first or second class Bachelor's degree or Diploma in Library Science with at least 7 years of experience in a responsible professional capacity in a large library.

The candidates must have demonstrated organisational abilities and leadership qualities and must have an understanding of acquisition of foreign books and journals.

Experience:

The number of years of experience indicated above in each case should be in a position of responsibility in an academic or research Library (preferably in a University or Technical Institute of higher education) or with extensive bibliographical activity in the areas of Science and Technology.

Desirable:

1. Everything else remaining same, candidates having basic degree in Science or Engineering will be preferred
2. Candidates having First or High Second Class Master's degree in Library Science will be preferred.
3. Knowledge of Hindi and of a modern European language other than English will be preferred.
4. Special consideration will be given to experience in modern Library systems and knowledge and/or experience in information science, especially in the use of Computer's for documentation and information retrieval.

The Indian Institute of Technology, Kanpur is one of the five Institutions which were established by Government of India to provide higher technical education. The Central Library of IIT-Kanpur has a collection of more than 1,00,000 books and bound periodicals covering engineering, technology, science, humanities and social sciences with current subscriptions to over 1600 periodicals, and serials. The Librarian at this Institute will belong to the academic community, and will be a member of the Academic Senate. He will be responsible for developing the

Library along modern lines, providing dynamic and imaginative leadership to the Library staff which includes over 60 members trained in Library works.

Other things are being equal preference will be given to Scheduled Caste/Scheduled Tribe candidates.

Posts are permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or GPF-cum-Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self-addressed unstamped envelope of 25 cm. x 10 cm. size. Applications should be accompanied by a postal order for Rs. 7.50 (Rs. 1.87 for SC/ST candidates).

Applicants from abroad may apply on plain paper in duplicate enclosing a complete bio-data and name of three referees from whom reference letters may be obtained.

All applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016 (India) on or before August 20, 1977.

TECHNICAL TEACHERS' TRAINING INSTITUTE, CHANDIGARH

Applications are invited for the undermentioned posts :

1. **Professors in the scale of pay Rs. 1500-1800 :**

Educational Management	—1	} Minimum period of experience in teaching and industry = 10 years
Civil, Electrical, Electronics and Mechanical Engineering	—1 each	
Science (Physics)	—1	
Training & Placement	—1	
2. **Assistant Professors in the scale of pay Rs. 1100-1600 :**

Education	—1	} Minimum period of experience in teaching and industry = 7 years.
Civil, Electrical, Mechanical Engineering	—1 each	
Science (Physics)	—1	
3. **One Senior Electronics Engineer in the scale of pay Rs. 1100-1600.**

Minimum period of experience in teaching and industry = 7 years.
4. **Lecturers in the scale of pay Rs. 700-1300 :**

Civil, Electrical and Mechanical Engineering	—1 each.	} Minimum period of experience in teaching and industry = 3 years.
One reserved for SC/ST		

All the above posts carry allowances at Central Government rates. Upper age limit is 35 years for Lecturers and 48 years for other posts.

Application forms with detailed information regarding qualifications and experience required may be obtained from the Principal, T.T.T.I., Sector 26, Chandigarh-160026, by sending self addressed envelope (28 cm x 12 cm). The last date of receipt of completed application form is 18th August, 1977.

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University lews

A CHRONICLE OF HIGHER EDUCATION & RESEARCH AUGUST 16, 1977 80 PAISE



Shri Ishwarbhai Patel welcoming the Prime Minister and Union Education Minister at the NCERT meeting.

ASSOCIATION OF INDIAN UNIVERSITIES PUBLICATION

SRI VENKATESWARA UNIVERSITY

Applications in the prescribed form are invited so as to reach the Registrar, Sri Venkateswara University, Tirupati-517502, A.P., on or before 3.9.77, for the following posts in the S.V. University College of Engineering, Tirupati:

1. PROFESSOR IN CHEMICAL ENGINEERING
2. READER IN CHEMISTRY

Scales of pay

Professor : Rs. 1100-50-1300-60-1600
Reader : Rs. 700-50-1250
(Implementation of Fifth Plan UGC Scales of Pay for the Engineering College Staff is likely)

Qualifications

PROFESSOR

- (a) A first or high second class (B Plus or 55% and above) of a Postgraduate Degree in Chemical Engineering.
- (b) Ph.D. Degree in the concerned subject or equivalent research work published in standard journals.
- (c) Not less than 10 years of experience in a responsible position in design/construction/production/research/teaching in chemical engineering/consultancy industry of which at least five years should have been in teaching.

Desirable

Experience in guiding research and evidence of original work in design/development.

READER

- (a) A first or high second class (B Plus or 55% and above) Post-Graduate Degree with specialisation in Modern Chemical Instrumentation/Chemistry of Pollution.
- (b) Ph.D. Degree in the concerned subject or equivalent research work published in standard journals.
- (c) Not less than five years of teaching experience.

Desirable

Experience in guiding research and publications in standard journals.

The prescribed application form can be had from the Registrar, Sri Venkateswara University, TIRUPATI-517502, Andhra Pradesh on payment of Rs. 5/- either by Andhra Bank/State Bank of India challan or by crossed Indian Postal Order for Rs. 5/- in favour of the Registrar, S.V. University, Tirupati, payable at the S.V. University Campus Post Office, TIRUPATI.

The University reserves to itself the right to fill or not to fill the above posts; to relax the above qualifications when candidates with the prescribed qualifications are not available and to consider and appoint persons who may not have applied.

Sd/-

M. J. Kesava Murthy
REGISTRAR

UNIVERSITY OF JAMMU NOTICE

Applications on prescribed form are invited for the following posts so as to reach the Registrar on or before August 30, 1977.

1. Reader in Economics in the scale of Rs. 1100-50-1300-75-1600 already advertised (Specialization; Econometrics/Mathematical Economics/Economic Statistics).
2. Lecturer in the scale of Rs. 700-40-900-EB-40-1100-50-1300 in the following subjects :
 - (i) Economics (Specialization in Economics Statistics).
 - (ii) Education.

For full details and prescribed application forms, please apply by sending a self addressed envelope of 25 cms x 10 cms size bearing stamps worth Rs. 1-50 paise alongwith a crossed postal order for Re. 1/- drawn in favour of the Registrar, University of Jammu, Canal Road, Jammu (Tawi) J & K State cashable at Jammu Post Office.

Sd/-
REGISTRAR

THE UNIVERSITY OF KASHMIR SRINAGAR NOTICE

I. Applications in the prescribed form are invited for the post of Lecturer in French in the pay scale of Rs. 700-40-900-EB-40-1100-50-1300.

II. Essential qualifications

- (a) Consistently good academic record with at least a high second class Master's Degree in French or an equivalent qualification from an Indian/Foreign University;
- (b) A Doctorate degree or published work of an equally high standard; and
- (c) Some teaching and/or research experience.

III. Desirable Qualifications

Diploma in teaching language by audio-visual method and in French Phonetics from a recognized institution in France.

IV. The prescribed application forms can be had from the Registrar, University of Kashmir, Hazratbal, Srinagar-6 on cash payment of Rs. 6/- or by sending a crossed postal order drawn in favour of the Registrar cashable at Srinagar Post Office along with a self addressed envelope (5" x 11") with the necessary postage stamps. While making a request for the application forms, the candidate is advised in his own interest to send his/her detailed curriculum vitae.

V. Seven copies of the application, each accompanied by attested copies of degrees/certificates and other testimonials should reach the

undersigned by or before August 27, 1977.

- Note: 1. It will be open to the University to consider the names of suitable candidates who may not have applied. Relaxation of any of the required qualifications may be made in exceptional cases in respect of any post on the recommendation of the Selection Committee.
2. Applications by Govt. servants should be sent through the Administrative Secretary concerned, by the University teachers through the Registrar and by persons employed by Private Firms and Institutions through the Head of the Firm/Institution concerned. Applications not routed through the respective channels will not be considered.
 3. Selected candidates will be placed on probation for one or two years on the basis of their merit.
 4. A suitable higher start may be considered for candidates with higher qualifications.
 5. Canvassing in any form by or on behalf of the candidate will be a disqualification.
 6. The selected candidates will have to produce the original documents relating to their age, qualifications, experience, etc. before joining the appointment.
 7. The selected candidates will have to present themselves for an interview and they will be paid T.A. at the following rates:
 - (i) Return actual second class railway fare, from the candidates nearest railway head to the place of interview or in case the applicant is already employed, actual return railway fare of the class to which he/she may be entitled according to the rules of his/her employer, provided a certificate to this effect is produced with the T.A. bill. The money receipts from the Station Master of the concerned Railway Station in lieu of the tickets must accompany the T.A. claim.
 - (ii) Return actual bus fare from Srinagar to Jammu or from Jammu to Srinagar, if interview is held at Jammu or Srinagar.
 - (iii) In case of candidates belonging to the State actual bus fare from their respective home towns upto Srinagar/Jammu and back.

No daily allowance will be paid.
(Saif-ud-Din Soz)
REGISTRAR

UNIVERSITY NEWS

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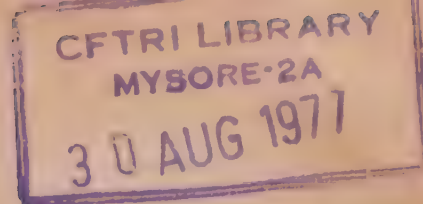
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Opinions expressed in the articles and reviews are individual and do not necessarily reflect the policies of the Association

Editor : ANJNI KUMAR



Problems of small colleges in Punjab

Amrik Singh

According to the Third Educational Survey, out of 173 colleges in the Punjab as many as 109 have an enrolment of less than 400. In fact 19 have an enrolment of less than 100, 43 range between 101 and 200, 32 between 201 and 300 and 15 between 301 and 400. The cut off point has been selected at 400 because, according to the UGC regulations in this behalf, unless a college has a minimum enrolment of 400 it is not even eligible for UGC development grant. According to the UGC data available, the affiliated colleges in Punjab received a per capita grant of Rs. 7.85 in 1971-72 as against Rs 22.1 in Tamilnadu, Rs. 21.52 in Uttar Pradesh, Rs. 20.56 in Maharashtra, etc. There is only one State which has got a lower per capita grant than Punjab and that is Himachal Pradesh which got Rs. 4.52. Clearly to create a situation where most of the colleges in Punjab render themselves ineligible for UGC assistance is to put oneself at an institutional disadvantage.

Some years ago Prof. Lakdawala, the Deputy Chairman of the Planning Commission carried out an analysis of colleges in Gujarat. According to him, it is with an enrolment of 800-1000 that the per capita cost is the lowest and academic efficiency the highest. In terms of this yardstick, 31 colleges alone out of 173 fall in the category of those between 501 and 1000. As in respect of other institutions, the size of a college is a matter of some significance.

In this context the following points require further consideration.

(a) There can be no rule of the thumb to cover every situation. In certain cases some of these colleges would have to be closed down. In certain other cases they would have to be merged with some other colleges. In certain other cases they may be enabled to construct hostels, add to their facilities and improve their general performance so that if enough school-going students are to be found in the neighbouring area such a college or colleges can look forward to better growth and stability.

(b) Even if some of the colleges are not closed down or merged with each other, a certain degree of

(Continued on page 433)

Some Issues in Higher Education

G. S. Mahajani*

The issues in higher education can be easily stated, though not as easily resolved to our complete satisfaction. Each one of us, I dare say, can according to his capacity and experience, suggest answers to the questions that arise. Here are mine.

I would list seven issues as under:

(i) Mass-higher education is being accepted as the goal, all over the world. To what extent and how shall we travel in that direction?

(ii) How to reconcile expanding enrolment with maintenance of standards?

(iii) Relations of the State and Universities. How to withstand pressures?

(iv) Curriculum construction to suit relevance to our times.

(v) Examination reform.

(vi) Teaching methods.

(viii) Size of an institution.

Before giving my remarks in respect of these problems, let me briefly point out two elements in the background and contemporary thinking on higher education.

First, Universities, as we know them, have been in existence for over 600 years and we do witness an evolution in the university concept and its functions.

(a) In the times of Bologna of Salerno Universities, students were trained for certain professions—law, medicine, church.

(b) Oxford and Cambridge Universities functioned as nurseries for gentlemen scholars, statesman and administrators.

(c) Göttingen and Berlin Universities acted as centres for scholarship and research.

(d) Charlottenburg and Zurich functioned like a staff college for technological experts and specialists.

Broadly speaking, from Newman's idea of a university producing gentleman scholars, who could in his times fit in any public office, through Flexner's emphasis on research-function, we have now come to Clark Kerr's exposition of a multiversity.

Secondly, universities the world over have been as pointed out by J.A. Perkins (US), overwhelmed by five crises, viz: (i) crisis of finance, (ii) of numbers, (iii) of relevance of the curriculum to life, (iv) of new priorities and, (v) the crisis of new scepticism. The debate has produced and is producing considerable literature. In addition to the writings of Perkins, Ashly (UK), Clark Kerr (US) etc., we have the occasional papers put forth by the International Council of Educational Development, Robbins report and not the least the Carnegie Commission's recommendations. This Commission before submitting the final document published 21 preliminary reports on

various aspects of higher (post-high school) education.

Let me now proceed to offer my remarks on the issues mentioned.

(i) Mass higher education

With the acceptance of democratic and socialistic ideas, higher education can no longer be confined to the elite. It has to be thrown open to the masses such of them as desire it. The +2 stage in 10+2+3 must not be split up. 11th and 12th classes must be together. After the +2 stage, however, admission to stage +3, will have to be selective.

The formula "10+2+3", should be read as Matriculation+2+(2+1), indicating that for a pass degree 2 years suffice and for honours etc., 3 years are necessary.

(ii) Expanding enrolment and standards

The reconciliation lies in Ashly's telling expression "More need not mean worse: more means different". This is to say, standards need not deteriorate simply because we admit more students, provided that—

(a) appropriate, diversified (different) courses are offered to suit the differing capacities and choices of the increased student-mix, during the +2 stage (11th and 12th grades). These two grades will have to be kept together with colleges or better in two-year junior colleges. Polytechniques should be integrated with junior colleges—for vocational courses.

(b) students are allowed to study, each at his own pace, and to collect the required number of credits.

Under such arrangements quality performance could be expected and should be insisted upon.

(iii) Relations of the State and the Universities

Let us recognise the fact that we have emerged into an era in which the solution of our educational, socio-economic problems will depend increasingly not so much on university autonomy as on the joint collaboration of the State and the University.

The reason is that nowadays the areas of their roles overlap. The State while mainly concerned with the spread of basic, primary education spends sums on high research, the university on its part while mainly responsible for teaching and research has also accepted the additional function of service to the community. This function of serving the common man has opened up a vast area in which the university has to cooperate closely with the State.

Then again even the old concept of autonomy never meant absolute autonomy. In 1948, Sir Walter Moberly (Chairman of U.G.C. of U.K. for many years) made the following classic statement:

"On any shewing, universities are powerful and influential corporations and they perform functions which are of high public importance, so that in no country can the supreme political authority be completely indifferent in the affairs of the university. It does and it must exercise some measure of supervision over them. Nowhere is university autonomy

* ex-Vice-Chancellor, Poona University.

absolute or unconditional. That is the first of my assumptions. My second assumption is that a high degree of autonomy is absolutely necessary if the functions of universities are to be properly performed".

Let me add in this context, that of the four freedoms, so far enjoyed by the universities, to decide—

Who may teach,
What may be taught,
How it shall be taught, and
Who may be taught,

the first one is most important and should not be eroded by public pressures or state directives.

(iv) Curriculum construction

The points to be remembered are :

(a) exposition of knowledge cries for the inclusion of new items in the syllabus; but

(b) only so much can be taught as can be truly learnt; therefore

(c) teachers must decide what old stuff can be cut out without loss of continuity,

(d) the syllabus has to reflect the points where a particular subject touches other subjects. This is a step for inter-disciplinary approach.

(v) Examination reforms

Points to be remembered—

(a) Examination cannot be abolished.

(b) The evil lies not in their multiplicity, but in the chance element which enters, if promotion depends on a single test at the end.

(c) Two measures are suggested—grading and question bank.

(d) Initially, grading be based on marks obtained which should never be divulged.

(e) There should be a question bank of 30 to 40 question for each paper. In that question paper half the number of questions (5) must be from the bank. This certainly and the reasonably small size of the bank will induce students seriously to study the subject.

(vi) Teaching methods

Universities Quarterly in 1970, 1971 devoted a number of articles on this subject.

Short of having tutorials in small groups of students—which calls for additional staff and finance—one thing can be done even in present circumstances. Every teacher should divide his lecture period into two parts 4/5th and 1/5th. The fifth part at the end should be devoted to questions, answers and discussion. This will create motivation among students.

(vii) Size of an Institution

The University Commission recommended 1500 as the maximum strength for a college. For economic viability, it should not fall below 500. In this context let me summarise the thinking of the Cernegie Commission.

Some institutions are too small to be effective either in the use of their resources or in the breadth

of their programmes they offer to students. 'The cult of intimacy' has its academic limits. A critical size is necessary for successful educational endeavour. So certain 'peril points' should be borne in mind below which management should examine their special history, the location, the purpose and the philosophies to determine whether the small size is desirable.

On the other hand, some institutions engage in mindless growth and subscribes to "the cult of gigantism"—that bigger is always better. And many state finance agencies assume that bigger is at least cheaper. Academic quality does not increase beyond a modest size. Hence institutions should carefully examine their growth (development) plans, as they exceed certain limits "the points of reassessment".

Problems of small colleges in Punjab

(Continued from page 431)

rationalisation would have to be undertaken. For instance, if in two colleges within a few miles of each other there are certain subjects which are not attracting sufficient number of students, it may be so arranged that that subject is discontinued in one college and all the students migrate to the other college. Adjustments of this kind are unavoidable and must be made so as to solve the problem rather than perpetuate it.

(c) Even when colleges are not closed down and the kind of rationalisation referred to at (b) above cannot be undertaken, it should still be possible for a teacher to be on the staff of one college and go to work in another college. Once again these are matters of accommodation with the existing situation.

(d) Most students who come to the small/rural colleges have not had good schooling. There is considerable scope therefore for what is called remedial teaching. The focus of this kind of teaching would vary from subject to subject. It would be best therefore to organise meetings of teachers connected with a particular subject so that experience can be pooled and new techniques and measures devised.

(e) The grant-in-aid code used by the Department of Education must be revised to take into account the special situation of these colleges. To apply the same yardstick to a college with 1800 students as to a college with 200 students is neither administratively sound nor academically helpful.

(f) A perspective plan in regard to each one of these colleges must be prepared. The most convenient span of time to take into account should be three years. Not only that, the situation must be reviewed every year. If in the following year the college has not shown any progress it should be given only one more year to do so. At the end of the second year a decision must be taken to wind up the college. Lest this should be regarded as unduly harsh, one must never forget that higher education today is receiving much more from the State than is justifiable. For every student at college as many as 20-30 students are being prevented from attending a school. □

Rejuvenating the University Administration

D. K. Ghosh*

In the context of our many faceted potentiality of education and the ambitious programme of educational planning aimed at meeting the needs of the socio-economic planning of this country, we must inject new zeal and vigour in the administration in order to stimulate the spirit of creativity, initiative and above all a keen sense of team work. We spend about 500 crores per-annum on higher education which is a sizeable amount, considering not the needs of higher education, but the total budget of the country and, therefore, it is necessary for every one of us to ensure that we really get the best result from every rupee spent. But this pre-supposes a well-knit and trained administration.

While our universities have, in the last one decade strengthened the teaching departments both by addition of good professoriate and by providing sophisticated equipment which have, in at least some of the universities and institutions, brought satisfactory results some of which could even be compared with international standard, nothing has been done to re-vitalise the administration which plays vital role at every stage of the university system. Since the administrative wing in the universities is an integral part of the university system, it is in the greater interest of the system that the administrative wing should be reinforced through the necessary in-service training courses and by modernising them so that the administration can meet the challenges of new dimensions in education.

Every field of work has its special needs and, therefore, specially trained persons are certainly more useful in the special job. We are living in an age of space and specialisation and it need hardly be emphasised that the university administration which is an area of delicate problems, mishandling of any nature may prove fatal. Thus, it is not a matter of mere rules-making unit but more of 'human relations' requiring special skill which pre-supposes a good background of education, its objectives and sufficient understanding of the psychology of teachers and students. A number of 'ills' generate from inefficient management from which neither the teachers nor the students can escape which ultimately impair the objectives of education. Since universities are autonomous bodies and are free to work within a given area of work, it is obvious that they should have the necessary expertise also to determine their 'plans and priorities.'

Paradoxically, hardly has any attention been given to the needs of recruiting the personnel from these points of view or to train them through the in-service courses. Recognising this need, the Kothari Commission observed "Administration is essentially a matter of faith and vision, bold and

courageous leadership and proper handling of human relations. The importance of securing the right type of personnel for it cannot, therefore, be over emphasised."

Our system of university management is one based on the collaboration of work between the Administrators and the educators. The system is such that although at almost every stage, educators have to participate in decision making processes, the stamp of official initiative and background is often borne in them. It cannot be rejected that a good deal of good result from the investments in education, depends on the performance of the administrators in a number of areas of the university system.

No less important is the process of implementation of decisions, in the course of which, many of the important schemes and decisions get lost either due to mishandling or the absence of a lack of proper understanding and appreciation on the part of the executors in the administration. While this is not desirable and is contrary to the expectations, the fact remains that because all executors do not possess the requisite background for a proper understanding and appreciation for the academic schemes, this happens. What is essentially needed is an academic-based approach to deal with the academic problems and schemes. Contrary to this, one would agree that due to lack of initiative and understanding, not infrequently, important schemes fail either due to delay or defective approach for implementation. The shortage of properly trained personnel in the set up of our educational administration has also been pointed out by the Kothari Commission.

Since the emergence of the University Grants Commission as the authority to assess and finance the developmental activities of the universities, more and more emphasis is being laid on planning. In the matter of planning in Indian universities, a good deal depends on the administrative organization, procedure and potentiality. Planning has assumed more importance in the context of 'changing approaches to 'social demand for more, better and relevant education'. Ours is an essentially poor country where public money should be utilised in the best possible manner so as to avoid wastage. Still greater care is needed in education which always suffers from short allocations. For this, what is primarily needed is the concept of suitable 'Area Planning' which can be done only by such personnel in the field of education who have :

- (a) fuller background of our education system.
- (b) complete knowledge of the needs in the university keeping in view of its past achievements, potentiality and needs on a priority basis and in a phased manner.
- (c) fuller idea of the needs of the region in education and what the society around requires in the context of National Educational Policy.

Unless our university personnel is suitably trained to accept the new challenges in education, it would be hoping against hope that it would properly respond to the needs of the system. Not only in-

* Registrar, IKSU, Khairagarh.

service training courses, holding of conferences and seminars would also go a long way in meeting this need.

Apart from the requirements of proper planning, a broad-base training would be helpful to the university personnel to handle the problems of teachers and students in the university campus with greater understanding and would contribute to the building of a corporate life in the university.

Obviously, to meet the special needs of the University administration, it is high time that there should be suitable in-service training courses for the university personnel which should be different for different categories of personnel keeping in view the job-requirements. The training course should be so designed as to provide a broad-base for the entire educational master plan together with a background of the Indian system of education. Suggested below is a scheme of Papers for such training:

Paper-I : History of Indian Education—Ancient and Modern.	100 Marks
Paper-II : A General Study of the Post Independence Reports of various Commissions on Indian Education.	150 Marks
Paper-III : Academic set-up of Indian Universities.	100 Marks
Paper-IV : Academic Planning and Execution.	150 Marks
Paper-V : Management System in Indian Universities and their present merits and demerits.	150 Marks

Paper-VI : Behavioural Aspects—Relations of—

- (a) Administration with Teachers
- (b) Administration with Students.
- (c) Administration and Educators with Students. 150 Marks

Paper-VII : Case Study—Given Problems of various nature seeking solutions. 150 Marks

Paper-VIII: Study of the Indian Constitutional Provisions on Education and Centre-State Relations on Education. 100 Marks

Paper-IX : General Study of the Pattern of Secondary and Higher Education in developed and some of the developing countries. 100 Marks

I have only made a general suggestion for framing a syllabus for a broad-base training. It would be in the fitness of things that the University Grants Commission considers this aspect of university need and frame, in collaboration with the National Staff College for Educational Planners and Administrators and the Administrative Staff College of India a suitable syllabus. □

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The Role of the Third World Countries in International Monetary Reform of 1971-75

The Second Amendment to the Brettonwoods Agreement leaves the bulk of the proposals made by the developing countries in the cold. Such benefits as have been described by me earlier are small benefits, more in the nature of sopas. The richest member of the Fund when it suited its national interest side-stepped the Fund regulations and the widely held views of Fund members and established floating rates for its currency, forcing many other countries to follow suit. The countries with floating currencies will be hardly amenable to Fund discipline in their domestic or external economic policies and the poorer ones who will in the long run be the user mainly of Fund resources will be liable to Fund prescriptions on their domestic policies. They have to bear higher charges and the rich countries will receive what is euphemistically described as remuneration, but which in reality will be the market rate of interest for short term borrowing, a situation that is hardly flattering to the concept of a cooperative world enterprise established to achieve high economic goals. The unwillingness of the rich nations to share with the very large number of developing countries of the world, the policy making powers continues to enshrine the distrust in which the richer countries hold their poor relations on this planet. The Fund, after all the elaborate negotiations that have been held, has not shed any of the attributes because of which it has earned the not very flattering reputation of being a rich nation's club. It has

had able and conscientious Managing Directors. Certainly so are the present and the previous Managing Directors who had laboured hard to make this world organization a better place for all of its members. But their efforts are adulterated and thwarted in many subtle and sometimes not too subtle ways. One of them who dared to suggest that some of the tall members in the club should also carry out their obligations to the Fund, had been shown the door out right in the midst of these negotiations. Internationalism is not yet a well developed or stabilised way of life. It often goes out of the window when nationalism enters by the door. Developing countries who need these international organizations more than their rich cousins do have quite an uphill task in rendering international institutions truly international.

The developing countries will therefore need a lot more disciplined leadership, skilled and efficient coordination of their own diversity of interests which are often in conflict with their aspirations. If they have to achieve their objectives they should, in my judgement, persevere in pressing on with the pursuit of these objectives and seek to work out a plan for a third amendment to the Brettonwoods Agreement that would render this very important instrument for international monetary regulation a truly international organization, not only in name but in its spirit and functions. That is not going to be easy and is unlikely to be achieved in a short while; but on

the other hand, there are many good countries and people even among the rich nations, and with their help and collaboration it should not prove to be too formidable a task.

In summing up this necessarily sketchy discussion, I wish to record the following impressions:

1. After four years of protracted negotiations the reform of the international monetary system has hardly embodied in it any of the worthwhile changes advocated by the developing countries. Most amendments were those sought for the benefit of the developed nations.

2. With a view to placating the developing countries, the richer nations have offered some modest benefits like the Trust Fund and Subsidy Account but these are benefits which the developed countries offered mainly as consolation prizes and do not constitute part of the Fund's structural and operational content like the link, for example.

3. One inference to draw from this experience is that given the power structure as embodied in the Fund constitution with a weighted system of voting, whatever the Ten richer countries want to decide alone gets accepted; and the developing countries seem to have little ability to have their concepts, however, technically valid, embodied into the Fund's Articles of Agreement.

4. The Fund is still very far from being able to operate as an effective authority for international money management, but the speed with which it can grow into such an organization is severely limited by the resistance inherent in the forces of nationalism, especially the extreme sensitivity to their own sovereignty of the bigger nations. They are willing to discipline and regulate the smaller nations with the help of the Fund machinery in respect of their policies but are unwilling to accept any suggestions for the regulation by an international agency, when it comes to the fulfilment of obligations by the richer nations of the world, though not all the rich nations are of that kind.

Excerpts from the address of Dr P.S.N. Prasad, Honorary Professor of Economics delivered on the occasion of golden jubilee of Andhra University.

5. Given all the circumstances this should not surprise any one, but in such a climate the growth of a truly balanced international management of money, has to remain an ideal for a long time to come and results cannot be achieved quickly.

6. Yet, the developing countries cannot remain indifferent, nor should they give up the vigorous canvassing of proposals designed to enhance the quality of this management from the point of view of its universal excellence rather than excellence in favour of certain powerful and sectional groups within the world community.

7. For this purpose groups like the group of 24, will in my view, have a very essential function to perform, and the degree of their strength will depend upon, how well an efficiently they organise themselves and make themselves felt. Their performance in the 1971-75 negotiation has been rather feeble in relation to the formidable strength and skill shown by the rival group.

8. Despite the need for a group of developing countries to continue their campaign, this should not be done in the manner of a confrontation, either in form or in spirit. The essential fact is that as an international organisation, it is a structure of the world community as a whole, and the rival groups perhaps will perform better, if each of these groups stretches its hand of cooperation across to the other group. Among the group of rich countries, there are quite a number, especially the smaller nations or those with a better developed conscience for international obligation, who share some of their beliefs and aspirations with those of the poorer nations. The endeavour should be to develop contacts and understandings with them to widen areas of collective agreement. Equally, the developing countries, which are much larger in number, have their own conflicts of interest, some of which had contributed to the weakening of the performance of the developing nations

group. Therefore, the more the groups strive to broaden areas of understanding and agreement between them the more rapid will be progress towards a more technically well-balanced international management of the money structure, which is after all a very important instrument for promoting the growth of the world's resources and the realization of benefits that flow from it.

Functioning in that spirit the developing nations should over a period of time prepare and canvass for a third amendment to the articles of the Fund agreement, and for achieving a more healthy distribution of the decision making power structure in the Fund organisation.

Educational trends in Punjab

A seminar on the present state of education in Punjab was organised by the Association of Principals of Small/Rural Colleges at Jullundur on 11th July, 1977. The seminar was presided by Shri Sukhjinder Singh, the State Education Minister.

Mr Prithipal Singh Kapur, the convener of the seminar at the outset pointed out that no structural change in educational pattern had taken place since independence. India continued to follow the old British educational pattern even after obtaining freedom from colonial rule. He raised the issues regarding the grants-in-aid system, the new pattern of education and other relevant aspects. Mr Jagjeet Singh spoke about the examination system and expressed the need for examination reform. Dr. Amrik Singh in his paper raised several important issues regarding the state of higher education in Punjab.

Dr G.D. Sharma of the Association of Indian Universities spoke on 10+2+3 pattern of education. He pointed out that in almost twelve States and Union Territories, there is fifteen years of first degree courses whereas in

another fourteen States and Union Territories, it is of fourteen years. Bringing about an uniformity in educational pattern, therefore, appears to be very reasonable. But this uniformity should not be brought about in a haste. There should be proper planning and phased implementation of the scheme. He suggested that a study about the knowledge gaps between fifteen years and fourteen years of first degree courses should be conducted. The syllabus for 10+2+3 should be prepared in the light of this aspect as well as the local requirements of the State.

One of the speakers who had been abroad narrated his experience and tried to suggest even sixteen-seventeen years of first degree course. Dr. Gopal Singh, talked about the general state of education in Punjab and lamented over the poor quality of education. Dr. Attar Singh pointed out that education system needs overhauling. Present education system has more or less served the elite class and it has not reached to the masses. The new pattern of education should, therefore, be so that it serves the masses. Unless this is done, he said, a time will come when forces from below would shatter the elite educational system. He also pointed out that our education system should be changed in the light of changed economic and social needs. Mr. Gurusharan Singh stated that B.Ed. colleges have not received proper attention.

Mr Sukhjinder Singh, Education Minister, in his concluding address pointed out that our education system should be such that it builds up character and makes persons fearless and firm about convictions. He stated that it seems this has not been done, otherwise emergency period in our country would not have lasted more than two to three months. While thanking the participants he said that he was greatly benefitted from the proceedings and hoped that few more such discussions will be organised in the near future.

Role of Science in National Development

Mr. Homi Sethna, Chairman of the Atomic Energy Commission while speaking on India's scientific and technological growth at SNDT University in Bombay said that during pre-independence days scientific and technological developments in India were mainly confined to raising the production of raw material and consumer goods. It was the Swadeshi movement in 1905, he said that gave the needed impetus to Indian entrepreneurs. At the same time, in the absence of requisite government support, the accumulation of capital needed for the growth of the modern industry was insufficient. Industries such as iron and steel, sugar,

set up in 1940 and a number of research institutes in different scientific disciplines were also established. In the major universities, basic research and a certain amount of applied research was carried out. The Ministry of Defence, moreover, had a number of establishments which were engaged in research.

Mr Sethna said that in the post-independence period, the electronics and the space programmes of the Union Government were organised as autonomous government departments. These programmes were expanding at a rapid rate. A programme for developing the peaceful uses of atomic energy was also evolving.

technology 2. Successful classroom teaching. 3. Modern educational trends. 4. Educational management and administration 5. Child care and education.

Apart from these courses, a research Associateship in education course of six months duration is also being offered as a preparatory course for those intending to complete their M. Phil and Ph.D. programmes. It also provides opportunities for action research to the teachers in schools and colleges. Through these courses, teachers both prospective and inservice in schools, colleges and universities, health and social workers, employees of the universities, boards and other State Governments and personnel working in adult education, continuing education and non-formal education programmes would be able to get specialised training in the particular areas. For evaluating these candidates, open ended assignments of practical nature are proposed which shall replace traditional tests and examinations. The syllabi are most modern and research based keeping in view the needs and problems of teachers.

The institute is also conducting a postgraduate diploma course in education through correspondence since 1975. It has brought about many innovations in the field of teacher education. Fellowship in education is also offered by the institute to those offering a research programme in any field of educational activity.

CAMPUS NEWS

cement and paper, the technology, plant machinery and skilled personnel were brought from abroad. Thus, at the beginning of independence the nation was confronted with innumerable problems. There was acute unemployment particularly in the agricultural sector. The population of the country had poor education and above all there was insufficient health care. It was because of these facts that India deliberately geared itself to the task of transforming its economic and social structure through a scientific process of planning.

Science and technology was called to play a vital role in the developmental efforts of the country—in the food and agriculture, education, health, communication, energy development and industry. The Council of Scientific and Industrial Research was

ed. The Electronics Corporation of India which also manufactured TV sets is a symbol of transferring research and development into production.

Short term training modules for teachers

A number of short term competency based training modules have been developed by Model Institute of Education and Research, Jammu. This institute is concerned with the development of educational research in India and other developing countries. It is currently handling research projects on behalf of the National Council of Educational Research and Training and the Indian Council of Social Science and Research. It is offering three months modules through correspondence in the following areas: 1. Examination

Changes introduced in Osmania

A committee consisting of leading educationists was appointed by Osmania University some time ago to give a new orientation to the Faculty of Education. Several innovations have since been introduced based on its recommendations. A two-year MA programme in education has been instituted from this academic session. The programme primarily aims at preparing student for study and research of basic issues and problems in the larger field of education and preparing them to hold positions of research, planning,

policy making and administration in the field of education. Graduates in any subject are eligible to apply for the course.

The Department of Education has also introduced a diploma in collegiate education. This one year evening course is open to postgraduate in any subject who are already teachers in colleges or who plan to take up collegiate teaching as a career. This will fulfil the need for growing pedagogic training which has been emphasised by several authoritative bodies.

The third innovation is the introduction of education as a subject of study and training at the first degree level. Education is now included among the three optionals available at the first degree level. It is expected that the faculty will attract motivated students to opt for teaching as a career even at an earlier age and not as it often happens as a last alternative. This will also help towards integrated training in content subjects and teaching methods which is not fully emphasised in the present B.Ed. programme. Such candidates will also be better prepared than many untrained graduates who are presently employed by a number of schools. A special feature of this course is that teaching practice and theoretical preparation are being made in three streams, to train people to teach in urban schools, rural schools and tribal schools separately. This will go a long way in attracting well trained teachers in important subjects like Mathematics, English, Physical Sciences to rural and tribal sections, thus serving the university's social commitment to the weaker and poorer sections of the societies.

The university is also considering the proposal to start evening classes for B.Ed. students in at least one of the teacher training colleges to enable untrained in-service teachers to qualify themselves. This would avoid lot of inconvenience and would also minimise the dislocation of work in the schools considerably where these candidates are working. There is also a proposal to start

correspondence courses for the M.Ed. course.

These measures are being taken with a view to see that the field of education, which had hitherto remained entirely as a field of knowledge including study, research and training. This way education would not any more be an ancillary discipline by itself on the analogy of management science.

Problems of Calcutta University reviewed

The West Bengal Minister of Higher Education, Mr Sambhu Ghosh held prolonged discussion with Dr Sushil Kumar Mukherjee of Calcutta University in connection with the holding of examinations on time and publishing the results without much delay. They also discussed various administrative and academic problems of the university.

During discussion the question of payment of remuneration to examiners assessing the answer-books was also reviewed and it was felt that for the speedy disposal of the evaluation work, the examiners should be remunerated. The State Government has already urged the Centre and the UGC to restore the examiners remuneration immediately.

As regards mass copying prevalent in some examinations it was suggested that immediate steps should be taken to check these malpractices which was the outcome of making the syllabuses too heavy. Adequate number of classes were not held in the colleges to complete the courses. In the postgraduate classes and professional courses like Medical and Law, there should be more full time teachers. Dr. Mukherjee said that the standard of education would not improve unless the students' unions were debarred from exerting their influence in matters of admission and examination results particularly at the postgraduate level. The Minister later had discussions separately with Mr A.L. Dias, Governor and Chancellor of the State universities on different matters concerning the university education.

Chicory seed grown in Himachal Pradesh

The agricultural scientists of Himachal Pradesh University have succeeded in growing chicory seeds for the first time in India. Chicory is an essential ingredient in any of the popular brands of instant coffee. It provides a special flavour and taste besides increasing its keeping quality. Kinnaur, with its ideal soil and temperature including chilling during winter months under knee-deep snow had earned the distinction of cultivating this highly remunerative cash crop.

The agricultural scientists started with the production of this seed as early as 1970. After long researches lasting for over six years, they could achieve the breakthrough in 1976 when 30 kg seeds were produced for test trials. The results were encouraging. Further research work has shown that the seeds of chicory produced in this area is superior to the seeds imported from foreign countries. According to the modest estimates, the average yield of chicory seeds per hectare is about 4 to 5 quintal which would fetch a handsome income ranging from Rs. 25,000 to 30,000 per annum. The cultivation is being taken up on a large scale as it is likely to bring a big boom for the farmers.

Jammu develops the new campus

With a view to meeting the expanding requirements of Jammu University and for providing a more congenial and disciplined atmosphere a new campus is being developed by the university on 125 acres of land at Bahuwali Rakh about 3 km from the city centre across the Tawi. An additional area of 100 acres has also been earmarked on the ridge of Bahu Fort. With the backdrop of mountains and the Tawi flowing closeby the site is ideally located for campus development.

The present campus came into being in 1969 when the university was established. It is located in cramped surroundings and very little space was available for its

expansion. The university has been much concerned all these years for the development of new campus. The master plan envisages the construction of residential quarters for teaching and non-teaching staff and hostels for boys and girls. Gandhi Bhavan and sports complex have been planned. A shopping centre and an institute of music and fine arts will also be constructed. The academic complex will create the necessary climate and atmosphere conducive for the post-graduate studies and research in various subjects. A central library, and administrative block and an auditorium for 1000 persons will also be located in this area. The campus will be a self-contained complex to meet the requirements of students and teachers.

A network of roads have already been laid and the construction of the law block, a bioscience block and the library building is fast coming up. During the year, the construction of girls' hostel and staff quarters for the college and non-teaching staff would be completed. A number of other buildings are likely to come up in the new campus. The UGC has earmarked a sum of Rs 80 lakhs in the current plan to meet the development of the university including its construction work. The State Government has also provided adequate matching funds for this purpose.

B.Ed. and LL.B. (academics) degrees through correspondence have been started from the current academic year. The B.Ed. course will benefit the inservice teachers while the two year LL.B. academic course will be of particular help to Government employees. A person successfully undergoing this course will be permitted to join the third year professional course.

A two year postgraduate course in education leading to the degree of M.A. in education and a diploma in applied electronics are also being introduced. The present diploma course will be mainly concerned with television technology. The next course would be in medical electronics.

Training for farm scientists provided at Hyderabad

The Central Staff College for Agriculture has been recently established by the Indian Council of Agricultural Research in the rocky area of Rajendra Nagar in Hyderabad. A three months training-cum-orientation course is conducted for the benefit of young scientists coming from all over the country. The scientists are new entrants to the Agricultural Research Service introduced recently. Already three batches of probationers have completed their training programme under the guidance of Dr. N.K. Anant Rao, Director of the college. The fourth course commenced in July 1977.

The main objective of the programme is to provide training in some of the basic skills required in agricultural research and to develop an awareness of the rural setting and the rural socio-economic system. Apart from lectures and practicals, seminars and visits to institute or projects in rural areas are also arranged.

The trainees fully participate in the running of the affairs of the college. Committees with the students as members look after different assignments.

Dr. N.K. Anant Rao, former Vice-Chancellor of Pantnagar University is the Director of the Staff Training College.

Additional grant for Delhi colleges

Thirty colleges of Delhi University which are managed by private trusts are likely to receive additional grants from the University Grants Commission to meet their financial deficits. A committee which was appointed to study the additional expenditure incurred by these colleges after the revision of salary of the teachers has suggested a formula for sharing of the extra expenditure by the college trusts and the Commission. At present the Commission provides for about 95% of the college expenditure, 5% is being met from the interest on the endowment fund. But the expenses have gone up considerably and the interest from the investments on endowments is

insufficient to provide the necessary cover. For quite some time Ram Lal Anand College, Dyal Singh College and Kirori Mal College have been under great financial strain. Even the richer trusts like Ramjas which manages the Ramjas College and Bharat Ram Trust which manages the Lady Shri Ram College for Women, Shri Ram College for Commerce and Hindu College have been complaining of money problems and have approached the UGC for necessary help. The Commission is likely to finalise its policy for assisting these colleges shortly.

B.Ed. Courses at PAU

The Academic Council of the Punjab Agricultural University has approved the proposal to institute Bachelor of Education degree in the Department of Extension Education from this academic year. The course will increase the employment opportunities for the graduates of agriculture, agro-mechanics and home science students of this university. It will also improve the teaching of agriculture in these subjects at the school level. The demand for trained teachers in the subjects already exists since a large number of such graduates are able to get employment in the schools. But mere graduates do not get the same privileges in salary, promotion, etc. as are admissible to B.Ed. trained teachers. The demand for trained teachers is likely to increase as the result of the introduction of vocationalisation and the introduction of the new pattern of education in various states.

Postgraduate course in Defence Studies

The MA degree semester course in Defence Studies was inaugurated recently at Madras. Air Vice-Marshal F.V.A. Scudder (Retd) is the Adviser and Head of the Department. He is assisted by Group Capt. Krishnamoorthi, a senior lecturer. To begin with twenty students including two women have been enrolled for this course. The central theme of the programme is the study of the internal and external threats that

are facing the country. Emphasis would be laid on various methods to meet these challenges. It is expected that the students completing the course could seek entry into the army services as well as in public administration, journalism and international affairs. The course includes study of issues regarding national security, economic aspects of defence, military geography, psychology, war and international relations and the impact of science technology on modern warfare.

Change in media of universities

Dr. P.C. Chunder, the Union Education Minister, in a reply to a question in the Lok Sabha said that the Union Government is consulting the states on switching over the media of instruction in universities to regional languages. He also proposed to convene a conference of the State Education Ministers to discuss this question in detail. The conference is likely to be held in Delhi shortly. He said that while the Central Government would do everything to promote the regional languages, it was not something that could be imposed. To encourage the production of original textbooks in regional languages at the university level, the government had been making grants from time to time. During the fifth plan period a sum of Rupees seven crores have been earmarked for this purpose. Some State Governments had also constituted committees for this purpose. There was no dearth of teachers to give instructions in regional languages. The Minister said that there were certain linguistic minorities and their problems have to be considered. So it was difficult to fix a time schedule for the switch-over to regional languages in the institutions under the control of the Central Government.

Preliminary test suggested for science and technology admissions

The Government of Bihar is considering a proposal to introduce competitive tests for admission to science faculty and technical

colleges. The proposal is likely to discourage unfair practices at all levels from secondary to post-graduate stages of education. The Government has taken a serious note and has suggested stern measures to check the growing indiscipline in students. The Vice-Chancellors have been advised to take immediate steps to check the indiscipline and ensure the normal functioning of the colleges and universities. The Education Department has assured all help to university and college authorities in the maintenance of peace and order. A radical change in the examination system is also contemplated.

Agro research analysis yields valuable data

An analysis of the recent all-India agricultural research examination results has revealed interesting data. More than 80 per cent of the 381 successful candidates belonged to families with an annual income of less than Rs. 10,000. About 27 per cent belonged to the income group of less than Rs. 5,000 a year. Nearly 60 per cent of the prospective research workers came from rural areas. By and large, agricultural research attracted students belonging to medium and low income groups.

The Delhi based Indian Agricultural Research Institute contributed the largest number of successful candidates (30) followed by Agra and Pantnagar Universities (28 each). Tamil Nadu Agricultural University came forth in this order (25). A little over 60 per cent of the candidates selected for agricultural research came from agricultural universities. The rest were the alumni of non-agricultural universities.

Jaipur concession for athletes

The University of Rajasthan will grant concession to outstanding players and athletes seeking admission to various courses in this academic year. Candidates who have represented India in International Tournaments or have played in the nationals, inter-university tournaments or school nationals at least once in the last

two years will be eligible for admission to the undergraduate course irrespective of the marks obtained by them at the qualifying examination. However, for the postgraduate course such candidates should have secured the minimum percentage of marks prescribed for admission.

Those students, who had played in the Rajasthan University tournaments and have failed for the first time will also be eligible for admission. Other things being equal, preference will be given to those students who had represented their school, university or state. If a student who had been given admission for his proficiency in sports, did not turn up to the ground regularly for practice, his admission may be cancelled. These concessions will be applicable in the faculties of arts, fine arts, social sciences, science, commerce, law and sanskrit studies in all the hundred and thirty-five affiliated colleges of the university.

Re-organisation of Punjab Agricultural University

The Punjab Agricultural University, Ludhiana and the Panjab State Agricultural Marketing Board are to be re-organised in such a way that the two institutions play an effective role in stepping up farm production and services to the community. Mr. Balwinder Singh, Punjab Minister for Agriculture, stated in Chandigarh that there was scope for making changes in the board of management of the university with a view to inducting specialists in the field of agriculture. He wanted the university to lay special stress on the research of new strains not only of good grains but also of commercial crops. The idea was to enable the farmers to renew the old varieties of seeds some of which have become prone to all kinds of ailments. Such research work should be conducted at those places which are best suited for the crops and not necessarily at the university's campus.

Sports programme to be reviewed

The Central Government will undertake a comprehensive review of the various sports programmes

and policies. The review would also cover steps needed to remove obstacles in various sports bodies militating against the promotion of sports in the country and to enable India to make a mark in international sports.

Dr. P.C. Chunder, Union Education Minister, told the Rajya Sabha that as the question had many ramifications including stipulations laid down by the various international sports bodies regarding the autonomy of sports federations it would take some time to complete the proposed review. In the meantime he has already initiated talks with the various sports bodies and individuals as a part of the review.

Diploma in American Studies

The Department of English, Osmania University, will conduct a diploma course in American studies on interdisciplinary basis. The admission to this course will start early in September. This year graduates in English literature, American literature, history, political science, psychology or philosophy would be eligible for admission.

UGC aid for Gandhian studies

The UGC will provide financial assistance to universities undertaking research work on problems of peace and on Gandhian thought and ideology. Dr P.C. Chunder, Union Minister for Education told Rajya Sabha that the Commission has already constituted a standing committee on Gandhian studies to advise the Commission on measures to be taken for developing studies and research on Gandhian thought.

Expenditure on education

It was stated in Lok Sabha that the annual expenditure on education by the Union and State Governments comes to about Rs 1,832.5 crores. Of this staggering amount, Rs 866 crores is spent on primary education, Rs 590 crores on secondary educa-

tion and Rs 366.5 crores on higher education including technical and university education and research. The State Governments determined their own expenditure, patterns depending upon their requirements.

Democratisation of the working of universities

The teachers in universities and colleges are these days in favour of a thorough democratisation within the departments and in colleges. They want rotation of headships and principalships among all the teachers, who have put in ten or more years of service. The trend is towards bringing about radical changes in the modes of execution and decision making.

The most important concern of any university department is to design and deliver courses for graduate and post-graduate students. The actual working of these courses will be constantly influencing the teachers in the form of students' response in tests and examinations. Without their participation in formulating changes in the syllabi, the working of the courses will not succeed. The present practice of syllabus making by boards of studies is tantamount to improving something from above and therefore, an emotional commitment on the part of teachers cannot be expected. If the courses are designed by the teachers of the department or college through discussions and mutual clarifications in a democratic manner, a sense of participation and responsibility gets installed and better results are sure to emerge.

In a postgraduate department, research work is a necessity. Adequate facilities for research and advanced scholarship have to be provided in the form of laboratories, books, journals. The propensities of the department and feasibility of programmes are known to the members therein and they, as a body will have to send proposals. It is ingenuous to expect that a single individual head will be in a position to fathom these possibilities and

requirements. The proposals for facilities, substantive staff requirements and inviting visiting fellows must be arrived at democratically by the members of the department and such a practice will promote better participation of the faculty and will make the working of teachers more rewarding.

Any college or university department is a socio-intellectual community having its own traditions, necessities and collective ambition. The new recruit will naturally be expected to fulfil these requirements. So, in respect of recruitments also, the department as a body may be enabled to have the initial and final authority. At present, the major and decisive share in the process of recruitment is had by the so-called head of the department. This has resulted in a great deal of vested interest and academic inbreeding is taking place unabated. Fresh intellectual experience is thus denied to the growing minds. If all the teachers have a voice in decision making, this inbreeding can be minimised and the new recruit is likely to become collectively acceptable. In turn, research and scholarship becomes more meaningful.

One of the most pernicious of the vested interests in the field of university education lies in the system of examinations. Teachers, especially at the top echelons develop and foster contacts with their counterparts elsewhere in the country with a view almost solely to getting and offering examinations. The UGC has commented on these vested interests in its plan to reform examinations. The lure of these contacts has blinded them to their socio-intellectual responsibilities and has refrained them from acting as promoters of educational growth. A democratic process in the internal administration of the university departments will have a sobering effect on these sub-academic activities of teachers.

When all the teachers of a department are perforce to have share in the academic decision making, the collateral requirements and experiences also begin

to influence. A teacher of political science might get influenced from a Sociology teacher and the former may thus contribute to the making of a better and more fruitful course in his subject. The much-desired and much-talked interdisciplinary culture might get promoted.

There is an apprehension, especially in Government circles, that universities do not need as much freedom as is claimed to be necessary. They tend to say that the universities need to be constantly checked and called to order. This impression is most unfortunate and requires to be remedied. Freedom or autonomy of the universities is not the freedom of the Vice-Chancellor or the syndicate or the heads of departments. It is the freedom of the individual teacher and possibly student, in the context of academic contacts and pursuits. This has become smothered by the hierarchy-ridden university apparatus. If the university is enabled to function as a federation of independent and mutually dependent democratic organisms called colleges and departments, the individual teacher gets de-alienated and his work becomes relevant and worthwhile both to himself and his students and colleagues. The Governmental misgivings will automatically vanish.

To bring into effect all the above aspects of the democratisation process, substantial changes will have to be made in the structure of our universities and their hierarchy. To eliminate the predominantly non-academic undertones in the administration of a large number of colleges, the departments of the collegiate education need to be abolished. Smaller universities with simpler administrative paraphernalia could be counted and the colleges could be handed over to them. Concomitantly, the teachers will have to exercise greater willingness in undertaking never types of academic responsibilities as the general socio-economic climate of the country improves the conditions of the teachers also become improved and they need not be unduly worried about the latter.

Karnataka decides to pay college teachers through Cheques

The Karnataka Government has decided to disburse the salaries to private college teachers and non-tutorial staff from the public exchequer through cheques. This has been done in implementation of the agreement with the management of these colleges. The representatives of the privately managed institutions had prolonged discussion with the authorities of the education departments.

About 1,200 teachers and non-teaching staff of 200 privately managed educational institutions all over the state will be benefitted hereafter. But the implementation of this new scheme will cost the government additional expenditure of about Rupees one crore. It is estimated to cover about 98% of the management's expenditure as against the present financial assistance of 80% of the approved expenditure under the existing grant-in-aid code.

A similar facility is likely to be extended to other aided colleges under the private management e.g. the engineering, the B. Ed and junior colleges. The Federation of University and College Teachers Association in Karnataka had been very vocal over this concession for several years.

The private colleges management association has now deman-

ded contributions of 3 per cent towards gratuity, under the Tripple Benefit Scheme for teachers. They claim that it should be treated as a part of the salary expenditure and should be met by the Government. The laboratory fee collected by the management should also be allowed to be retained by the management. The present system of reimbursement of the loss of income (at management rates) on behalf of the free scholars would be continued and no prior approval should be insisted upon for appointments made to the teaching and non-teaching staff. Apart from these, under the existing rules, no further restrictions be imposed on the management and they should be allowed to collect upto and double the standard rate of fee and there should be no interference with the existing autonomy and day to day working of the managements.

The Education Minister assured the representatives of the managements that the Government believed in the 'philosophy of private management' and would continue to maintain it though it was determined to firmly deal with the corrupt practices and irregularities in the management. He advised the managements to cooperate with the Government in successfully implementing the scheme as the money involved in both private and public sector was essentially that of the public.

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Student Unrest in Bangalore

(From our special correspondent)

Student violence in Bangalore during the second half of last month not only gripped the university for a whole week but resulted in much damage to public and private property.

It began with a one-day "University Bandh" called by the Bangalore University Students' Action Committee in support of its six demands. These included that student representatives should be elected not nominated on the Senate, the semester system should be abolished, all forms of donations obtaining in private colleges should go and that the fee structure in all colleges should be uniform.

Besides, it demanded the resignations of Mr Devaraj Urs, Chief Minister of Karnataka, and Dr H. Narasimhaiah, Vice-Chancellor of Bangalore University. The Chief Minister's resignation was sought on the ground that Mr Urs as Home Minister was "directly responsible for police excesses on students during the Emergency."

The Action Committee's grouse against the Vice-Chancellor was that he allegedly bought furniture worth Rs 3 lakhs without the approval of the Purchase Committee, continued a professor in his post without the approval of the Chancellor and allegedly praised the Emergency and spoke disparagingly of Mr. Jayaprakash Narayan,

On the day of "University Bandh", a delegation on behalf of the Students' Action Committee presented a memorandum containing the demands to the then Chancellor, Mr Uma Shankar Dikshit, Governor of Karnataka, at Raj Bhavan (Mr Dikshit relinquished the office of Governor on August 1 and Mr Govind Narain, former Defence Secretary, has assumed charge.)

Mr. Dikshit told the Action

Committee delegation that complaints of "excesses" on students during the Emergency might be made to the Shah Commission of Inquiry appointed by the Central Government, for necessary action.

On the demand to scrap the semester system, the Chancellor said that it had been widely recognised as a good means of imparting and testing the absorption of knowledge by students. The UGC was in favour of the system and it would not be wise to scrap it without giving it a fair trial. He told the delegation that the Vice-Chancellor would be requested to appoint a committee to review the working of the system from time to time in order to make reasonable corrections or effect improvements in the system.

The Chancellor referred to the Minister for University Education for consideration the demands to scrap all forms of donations and bring about uniformity in fee structure.

To the demand that the Vice-Chancellor "must go", he said that specific allegations made against Dr. Narasimhaiah by the Action Committee had been referred to him for his comments. The matter would be looked into after the comments were received.

The Action Committee delegation that met the Chancellor did not meet the Vice-Chancellor. But members of another Action Committee met Dr. Narasimhaiah and presented him a memorandum containing seven demands which included ending the semester system, student representation on the Syndicate and Academic Council and governing councils of colleges, uniform fee structure and abolition of all forms of donation.

The Vice-Chancellor told the members that he would be cons-

tituting soon a committee, including students, to consider the merits and demerits of the semester system. The demand on donations and fee structure would be referred to the Government. As for the student representation on the Syndicate and Academic Council, the demand would be referred to the appropriate bodies of the university. The managements of colleges, both Government and private, had to consider the demand for student representation on their governing councils.

The Action Committee that called for the "bandh" levelled 30 charges against Dr. Narasimhaiah and demanded that these be inquired into by the Central Bureau of Investigation. It also called for the resignation of the Vice-Chancellor and said that unless he went the students would boycott their classes indefinitely. The charges were maladministration, embezzlement of funds and irregularities in creating and filling up posts in all cadres of teaching and administrative departments. Another charge was that the university had spent Rs 70,000 last year on its investigation of miracles and other superstitious beliefs.

On the first day of the week-long strike, about 200 students hijacked two city transport buses to the new campus of the university at Jnana Bharati, 15 km from Bangalore, and made a bee-line for the Vice-Chancellor's room. Apprehending trouble Dr Narasimhaiah took shelter in another room. Not finding the Vice-Chancellor, the students ransacked his room and smashed the windows. The telephone receiver was broken and the table was littered with glass pieces. After repeatedly stoning the empty chair and smashing all things on which they could lay their hands, the students shouting slogans against Dr. Narasimhaiah climbed to the third floor of the administrative building and threw stones. The police strongly believe that it was a planned attempt to assault the Vice-Chancellor.

In the city, where most of the constituent colleges of the univer-

sity are located, the students, out in numbers on the road, made the passing city transport buses, motor cars and autorickshaws the main targets of their stone-throwing attacks. There were also reports of damage to some shops near Central College and the residence of an advocate. According to the police, at least 30 cars, 25 buses and 12 autorickshaws were heavily damaged in the week-long agitation. The damage caused to the vehicles is put at Rs 10 lakhs and to university property about Rs. 2 lakhs.

The students' agitation attracted the attention of members of both Houses of Legislature which were in session in Bangalore then. Making a statement in the Legislative Council, The Chief Minister made it clear that while the Government was interested in the welfare of students, it would not be "a silent spectator" of their violent activities. The Government was seized of the issues raised by the students and these would be resolved in due course.

While pointing out that a majority of students were against such agitational activities, the Chief Minister said there were some professional agitators who should be condemned by everyone. There were a number of action committees claiming to make demands on behalf of students and the problem facing the Government was to identify the student leaders.

In a lengthy press statement, the Vice-Chancellor explained the preparation that had gone on before introducing the semester system. All deans, heads of departments and the Academic Council, including its 10 elected teachers, met five times. Four months were taken to frame the syllabus. The members of the Board of Studies and the heads of departments of colleges were consulted. The system, favoured by the UGC, was first introduced in the university in 1967 for engineering students. In 1976 it was extended to M.A., M.Sc., M.Com. and other postgraduate courses. With the approval of principals of colleges and heads

of departments it was now being introduced for B.A., B.Sc., B.Com. and other courses.

While agreeing with the students' contention that the new system, providing for two examinations in a year, involved additional financial burden on them, he has given an assurance that the possibilities of lessening this would be considered.

On the question of election of student representatives on the Senate, the Vice-Chancellor explained that the Karnataka State Universities Act provided for the election of two from among the postgraduate students and three from among undergraduates for a term of one year. Since there was Emergency last year and the colleges were prohibited from holding any elections, the Act was amended by the Legislature to provide for the nomination of student representatives.

After the lifting of the Emergency in March, the Vice-Chancellors of Bangalore, Mysore and Karnatak had unanimously requested the State Government to restore the election of student representatives on the Senate as provided in the Act. But in view of the fact that the three universities had been functioning without the senates and other academic bodies for over an year and in order to constitute these bodies now, the Government had advised the university authorities to nominate the student representatives so that the delay involved in amending the Act and conducting elections could be avoided. Five students were nominated keeping in view the guidelines given by the Chancellor which included giving representation to girls, scheduled castes, religious minorities, sportsmen and one for academic excellence.

Dr Narasimhaiah said that he was ready to face any inquiry either by the CBI or the UGC or any such body. Any irregularity on the part of the University or the Vice-Chancellor should be brought to the notice of the Chancellor and the Government for taking necessary action. All issues should be settled by demo-

cratic methods and not in the streets.

The Vice-Chancellor described the charge made by an action committee that the university had spent Rs 70,000 last year on it investigation of miracles and other superstitions, as "a malicious propaganda and a blatant lie." The amount spent was just Rs. 750.38. He said it was "mean and baseless" to say that he had criticised Mr Jayaprakash Narayan. This was another "mischievous and vilifying propaganda" that was being carried on against him. Dr. H. Narasimhaiah has since resigned and his successor has been appointed.

Need for uniform fee for engineering course

The Bangalore University Engineering Students' Action Committee has urged the State Government to evolve a uniform and rational fee structure for private engineering colleges. The Government Engineering Colleges collect Rs 300/- per student. The fee however varies from Rs. 600/- to Rs 1200/- a year in private colleges. Some private colleges still collected huge sums as capitation fee, though the government have limited the collection to Rs. 6000/- per seat. The managing bodies of these colleges did not issue receipts for the amount collected above the ceiling fixed by the Government.

The students have also urged the Bangalore University to rectify the defects in the semester system of the engineering course. The rules require the students to study only five subjects in a semester but practically they were forced to study ten subjects in each semester. The President of the Association has appealed to the university authorities to uniform duration for all semesters as otherwise students had to keep on studying throughout the course without any vacation. He has suggested that practical work should be allotted to alternate semester to overcome the dearth of laboratory facilities.

Prime Minister Addresses Review Committee Members

Shri Morarji Desai, Prime Minister of India, met the members of the Committee appointed earlier to review the syllabi and textbooks prepared by the NCERT for the 10+2 system of education.

Shri Ishwarbhai Patel, President of the Committee, welcoming the Prime Minister said that the task entrusted to the Committee is very responsible. The members would soon discuss the educational programmes which would be available to the children under the new scheme. While doing so the capacities of the children, the needs of the society and the various limitations of the teachers as well as that of the institutions will be kept in view. The emphasis however would be on flexibility and sufficient elbow room would be provided to every State to make adjustments according to their own needs and requirements of the various regions. There was broad agreement with regard to relating the work to the real life problems to education. The young people needed a gainful productive work activity which should lead them to understand life properly. Besides the class rooms and the features, there should be options provided to cater to the interests and capabilities of the children both individually as well as in groups. The Committee has prepared tentatively objectives and the schemes of studies which will be further discussed. It was also important to examine the number of subjects that children should offer and see whether the contents are meaningful and go well with their capacity of understanding and the teachers capacity to put

them across. The whole programme should be simplified with regard to the content of the scheme of studies.

Shri Morarji Desai in his address said that education is meant to train people, to use their capacities intellectual and physical to the best extent possible. This becomes possible only if person who receives the education develops fearlessness and truthfulness.

Briefly outlining the development of Indian education, the Prime Minister said that Mecauley attempted and ultimately succeeded in converting Indians to his school of thought. That is why he devised this educational system and he made no secret of it. We are still following that old pattern of education. The Prime Minister said that education has to be an instrument of reconstructing our society and we want it to be reconstructed. Education is the best instrument for achieving this objective. We should do it economically and in such a way that human personality becomes richer and happier.

Education needs complete overhauling. The whole attitude to education will have to be changed. For unless that is changed, new pattern will not solve any problems; it will add to the problems, complicate it, and disturb the whole fabric which has already been disturbed. So we must first of all be clear about the purpose of education and then the content of it. For that purpose we should not imitate England or America. We should embody and express the real India

with its culture and heritage. Look at our public schools. What do they manufacture? Education is not the capacity to talk well or to be snobbish. Education should give what is called *Manyata*. But we are forgetting all that. How is it to be brought about? Unless the teachers are able to see this point of view all efforts that we make will not succeed.

A teacher teaches throughout his life. This is the real essence of our culture. We must follow the truth. That means the thought, words and deeds must synchronise. It is the teachers who can ensure that. Therefore they were given the higher status in our society. That did not necessarily mean that he should get higher reward in monetary terms. That, however, seems to be paramount consideration today.

We should steer education from strong holds of government. I do not want the government to run education. The education must be run more non-officially than officially. That does not mean government should not give money. Government collects money from all people and if it gives for many things, it is obliged to give for education. What it could say is that the standard of education, the principles of education are properly observed. That should be the only task of government. They should see that the funds that are given by government are not misappropriated and squandered. Beyond that government should have no say in this matter.

We are suffering from centuries of wrong thinking in which we have got trapped by our own fault, because we started quarrelling between ourselves. Therefore we were subjected to alien rule. It was not the British Government that conquered India. We conquered India for the British and ran it for them.

The Prime Minister appealed to the members of the Committee to examine all the issues in the wider perspective and called for suggestions so that they could be further discussed at various levels.

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Bhaumik, Jyotibhushan. Some gas dynamical problems on explosions. University of Calcutta.
2. Charanjit Lal. A study of certain Kampede Feriet function. Punjabi University.
3. Chetty, Shivashankar Sidramappa. Some problems in fluid dynamics. Karnatak University.
4. Desai, Pushpavati Venkappayya. Topics in differential geometry: Contribution to the study of recurrent spaces. Karnatak University.
5. Patra, Baidyanath. Solution of some plane and three dimensional problems of mathematical theory of elasticity and associated mathematical techniques. University of Calcutta.
6. Raypalodhi, Basudeb. Some problems in eigen function expansion associated with a type of matrix differential operator. University of Calcutta.
7. Saha, Bibhutibhushan. Some generating functions for classic orthogonal polynomials and their generalization. University of Calcutta.

Physics

1. Bhattacharyya, Debaprasad. Sea level muon spectra near equator at different zenith angles and their primaries. D.Sc. University of Calcutta.
2. Das, Narayan Chandra. Theory of magnetic susceptibility of metals. Utkal University.
3. Desai, Vasanth Pandurangarao. Some studies on the ligand field theory and related problems in the compounds of the ions of palladium and platinum series. University of Calcutta.
4. Godge, Sadashio. Studies in molecular spectroscopy. Marathwada University.
5. Gupta, Subash Chander. Study of nucleon distribution on the surface of heavy nuclei through k-interaction (captures in emulsion nuclei). University of Jammu.
6. Lakshmipathi Rao, Meka. Spectral studies of some diatomic molecules. Andhra University.
7. Lingdoh, Evelyn. Theoretical studies on some aspects of atomic and molecular collision processes. University of Calcutta.
8. Patel, Akhileswar. Estimation of parameters of the scattering macromolecules in sisal fiber by low-angle X-ray methods. Sambalpur University.
9. Purkait, Nripendranath. Studies on D and E layers of the ionosphere. University of Calcutta.
10. Raghubar Dayal. Electron paramagnetic resonance and structural phase transition studies of Mn $2+$ doped single crystals and some metal perchlorate hexahydrates. I.I.T., Kanpur.

11. Subrahmanyam, Vanmissetty Veera Venkata. Studies on beta-generated bremsstrahlung. Andhra University.

12. Torasia, Sodananda. Investigation of macro-molecular parameters of keratin by low angle X-ray methods. Sambalpur University.

Chemistry

1. Abidi, Hameeda. Chemical studies on Dolichos billorus, horse gram seed. Kanpur University.
2. Ashok Kumar. Polarographic determination of metal ions with some polyethylenepolyamines. Punjabi University.
3. Bhatt, Y.N. Studies on complexes. Saurashtra University.
4. Bhatta, Dinabandhu. Annealing studies on some promates and bromate mixed crystals. Utkal University.

5. Biswas, Amalkumar. Studies on heterocyclic compounds. University of Calcutta.

6. Chakrabarti, Asutosh. Studies on naturally occurring heterocyclic compounds. University of Calcutta.

7. Durani, Susheel. Synthesis of potential antifertility agents. University of Jammu.

8. Gandotra, Ashok Kumar. Adducts of cobalt (II) and nickel (II) complexes of carboxylic acids with nitrogen donors. University of Jammu.

9. Ghoshal, Pullab Kumar. [Synthetic studies on sesterterpenes and diterpenes. University of Calcutta.

10. Lahiri, Saswati. Thermal, photochemical and electron-impact transformations of 1,2-dibenzoylalkenes and related studies. I.I.T., Kanpur.

11. Maiti, Gobinda Chandra. Physico-chemical studies on single, binary and ternary oxide catalyst systems used in fertilizer technology. University of Calcutta.

12. Mangat Rai. Dipolar additions to carbon-nitrogen double bonds. Punjabi University.

13. Mohammed Yusuff, K.K. Studies on some dithiocarbamate and halogeno dithiocarbamate complexes of 3d-transition metals. University of Kerala.

14. Patel, Kantilal Shivram. Solution properties of amylose nitrate and amylose sulphate. Sardar Patel University.

15. Roy, Purna Chandra. Preparation and physico-chemical studies of some transition metal complexes (cobalt). Sambalpur University.

16. Samantra, Kura Chando. Mechanism and structure in some organic reactions. Berhampur University.

17. Seshaseyi, Y. Studies on the solvent extraction of ferrous and platinum group metals. Sri Venkateswara University.

18. Sondhi, Sham Murari. Studies in the synthesis of steroidal analogues containing nitrogen and sulphur. Punjabi University.

19. Srinivasa Rao, Appajosula. Some studies on the kinetics of the thermal decomposition of calcium carbonate. Indian School of Mines, Dhanbad.

20. Sugunan, S. Electrophilic catalysis in nucleophilic aliphatic substitution. University of Kerala.

21. Syamal, Arun Sankar. Synthesis, magnetism and spectroscopy of some selected metal complexes. D.Sc.

Earth Sciences

1. Banerjee, Basu Dam. Geology, petrology and petrochemistry of Rajhara coals, Daltonganj coalfield, Bihar, with special reference to metamorphism of the coals. Indian School of Mines, Dhanbad.

2. Pande, Ravindra Nath. Ganai-chaukhtia area in kumaon himalaya. M.S. University of Baroda.

3. Rama Shankar Singh. Some geophysical investigations for ground water prospecting in Dhanbad area, India. Indian School of Mines, Dhanbad.

4. Sudhakarn, K.S. Ultramafic rocks and chromite deposits of nuggehalli schist belt, Hassan district, Karnataka State, India. Sri Venkateswara University.

Engineering & Technology

1. Chetty, K. Lakshminarayana. Physical and thermal properties of bentonite-bonded sands. Sri Venkateswara University.

2. Mahapatra, Kailash Chandra. Investigation on biopolar transistor from D.C. to high frequency. Sambalpur University.

3. Murty, Karri Narayana. Laminar film condensation: Effects of suction, gravity and magnetic field. Andhra University.

BIOLOGICAL SCIENCES

1. Harminder Singh. The physique and body composition of Indian athletes and sportsmen of selected physical activities. Punjabi University.

2. Kartha, G.S. Sreedharan. Cell surface in cell interaction. Jawaharlal Nehru University.

Biochemistry

1. Batabyal, Sandipkumar. Studies on antibiotics in health and disease with special reference to their metabolic effects. University of Calcutta.

2. Bhaskaran Nair, R. Investigations on the venom of South Indian scorpion, *Heterometrus scaber*. University of Kerala.

3. Chakrabarti, Kalyan. Studies on the intestinal absorption of different tetracyclines and chloromphenicol in vitro. University of Calcutta.

4. Prasannan, K. Biochemical investigations on diabetes mellitus. University of Kerala.

5. Srinivasan, A. Studies on characterization of test systems for elucidating the pathways of action of caffeine. Jawaharlal Nahru University.

6. Subba Rao, M.N. Some regulatory aspects of RNA metabolism. M.S. University of Baroda.

Microbiology

1. Mandal, Bimal Kumar. Clinico-pathological studies of some aspects of mycoplasma infection in man. University of Calcutta.

Botany

1. Abraham, T.K. Improvement of citric acid yielding strains of *Aspergillus niger* by radiation and studies in the biosynthetic pathways of citric acid. University of Calcutta.

2. Bongale, Ulhas Damodar. Studies on soil algae. Karnatak University.

3. Chandrasekharan Nair, N. Studies on morphology of angiosperms and Indian flora. D.Sc. University of Calcutta.

4. Dave, Jitendrakumar Jayantilal. Studies on the effect of gibberelic acid on the physiology of germination of cotton, *Gossypium herbaceum* L. Var. Digvijay. M.S. University of Baroda.

5. Dhakarey, Ram Pratap Singh. Studies on the vegetation of different forests of Panna District of M.P. Awadhesh Pratap Singh University.

6. Munivenkatappa, Sanjappa. Cytotaxonomical studies in some genera of the tribes: Indigofereae and Desmodieae of Fabaceae. M.S. University of Baroda.

7. Paliwal, K.C. Autecology and genecology of some ecotypes of *Cenchrus ciliaris* complex. Saurashtra University.

8. Parmil Kaur. Physiology of salt tolerance in sugarbeet, *Beta vulgaris* L. Punjab Agricultural University.

9. Patel, Navinchandra Dhulabhai. Developmental and anatomical studies in pericarp of some solanaceous fruits. Sardar Patel University.

10. Paul, Sushil R. Florisitics and phytogeography of the Natarhat, Bihar. Bihar University.

11. Shah, Rajendrakumar Ratilal. Studies on enzymes related to phenolic acids in plant tissue cultures. M.S. University of Baroda.

12. Verma, Raghunandan Prasad. Pathological and physiological studies of certain fungi imperfecti. Bihar University.

Zoology

1. Bais, Verendra Singh. Studies on the functional morphology of some endocrine glands in fresh water fishes with special reference to their control of reproductive cycle. University of Saugar.

2. Bhargava, Pratibha. Development of the osteocranium in *Nundus marmoratus* (Cul. & Val) and effects of antithyroid drugs. University of Saugar.

3. Dodakundi, Gangadhar Basalingappa. Aspects of microbiology in sewage and oxidation pond. Karnatak University.

4. George, P.V. Studies on the acanthocephalid worms in Kerala. University of Kerala.

5. Manna, Chanchalkumar. Cytophysical investigation of the avian adreno-cortical zonation. University of Calcutta.

6. Padhi, Suresh Chandra. Biochemical studies in the brain of aging male garden lizard, *Calotes versicolor* (Daudin). Berhampur University.

7. Parasher, Gauri Shanker. Studies on the neurosecretory cells of the ventral ganglia of insects. University of Saugar.

8. Patel, Sumanbhai Thakorabhai. Studies on certain aspect of adaptive physiological and biochemical changes in migratory birds. M.S. University of Baroda.

9. Thangjan, Kamashwar Singh. Studies on the aphids, homoptera: insects, of Manipur State. University of Calcutta.

10. Venkateswarlu, D. Effect of scorpion, *Heterometrus fulvipes*, venom on some physiological process in the frog, *Rana hexadactyla*. Sri Venkateswara University.

11. Vijayalakshmi, V.R. Some aspects of the reproductive physiology of male cockroaches. Calicut University.

Medical Sciences

1. Gupta, Manidipa. Studies on some aspects of ovulation blockage faculty of ergocornine in rates. University of Calcutta.

2. Nag, Pranabkumar. An ergonomic evaluation of different types of manual work in relation to productivity. University of Calcutta.

3. Nag Chaudhuri, Asis Kumar. Alterations in physiological activity induced by venom for scorpions found in West Bengal. University of Calcutta.

Agriculture

1. Chakravarty, Narayan Digendra. Influence of climate and topography on pedogenesis of alluvial soils in Assam. Punjab Agricultural University.

2. Chattopadhyay, Subhendudeb. Studies on rice breeding with special reference to low temperature tolerance photo-insensitivity and high yielding capability. University of Calcutta.

3. Choubey, Ram Davar. Studies on leaf and sheath blight of paddy caused by *Rhizoctoria* species. Kanpur University.

4. Khanna, Brij Mohan. Pathological and epidemiological studies on the leaf blight of wheat caused by *Helminthosporium* spp. Kanpur University.

5. Kirpal Singh. Studies on saline sodic soils of Uttar Pradesh with special reference to Kanpur District. Kanpur University.

6. Daya Ram Singh. Physiological and pathological Studies on *Pyricularia pennisetica* causing leaf spot of bajra, *Pennisetum typhoides* Stapf and Hubbard. Kanpur University.

7. Sasmal, Pranabkumar. Studied in rice with reference to genetic variability, stability parameters and competition under varying levels of phosphate nutrition. University of Calcutta.

8. Virk, Jagjit Singh. Studies on the performance of wheat grown after different kharif crops. Punjab Agricultural University.

9. Yein, Basanta Ram. Studies on controlling the post complex of mung, *Phaseolus aureus* Roxb through aldicarb application with and without the use of different fertilizers. Punjab Agricultural University.

10. Yogesh Kumar. Effect of solution flow velocity on the removal of exchangeable sodium and prediction of Ca-Na exchange in sodic soils. Punjab Agricultural University.

Veterinary Science

1. Panghal, Bhoop Singh. Studies on pathogenesis, serodiagnosis, immunity, pathology and therapy of *Babesia equi* in donkeys. Haryana Agricultural University.

**PANJAB UNIVERSITY
(CHANDIGARH)**

(Advertisement No. 19/77)

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh by 9.9.1977 along with postal orders of Rs. 7.50 each for posts at Sl. Nos. 1 to 5 and Rs. 5.00 each for posts at Sl. Nos. 6 to 8. Number of post/s is/are indicated with the subject. Qualifications essential and desirable be persued carefully.

1. **Administrative Officer** (Department of Commerce & Business Management)-1 (Pay-scale: Rs 1100-50-1600)

Qualifications

Essential

- (a) A first or high second class post-graduate Degree/Diploma in Business Administration / Industrial Management/Marketing Management/Personnel Management.

OR

Post-Graduate Degree in any related discipline such as Sociology/Economics / Commerce/Psychology/Social Work/Mathematics/Statistics/Engineering with familiarity in Business Management/Personnel Management.

OR

Bachelor's Degree and Associate/Fellow of ICWA or Institute of Chartered Accountants.

- (b) At least 5 years experience in academic Administration at the Executive level or in a Business House as an Executive.

Preferential

A person having industrial background or the knowledge or working of private and or public undertakings or educational institutions with special reference to Placement and Training will be given preference.

2. **Reader in Chemical Engineering-1** (Pay-Scale: Rs. 1200-50-1300-60-1900)

Qualifications

Essential

First class Master's degree/Doctorate degree in Chemical Engineering with a minimum of five years' experience in teaching/research in an institution of University Standard with outstanding teaching/research experience.

Desirable

Published work in standard journals.

3. **Lecturers** (Pay-Scale: Rs. 700-40-1100-50 1600)

Commerce & Business Management-4, Economics (for Department of Public Administration)-1, Education (including one for Diploma in Educational Techno-

logy one for Diploma in Vocational Guidance and Counselling and one for Evening classes)-4, English-1, French-1, Gandhian Studies-1, German-1, History of Art-1, History-4 (P.U. Evening College, Chandigarh-1, Department of History-3), Journalism-1, Punjabi-1, Philosophy-1, Geography-2, Political Science-1, Psychology-2, Statistics-2, Urdu-1, Anthropology (Social Anthropology/Demography)-2, Physical Anthropology-1, Botany-3, Plant Biochemistry (Department of Botany)-2, Plant Physiology (Department of Botany)-1, Biophysics-2, Mathematics (Applied)-1, Mathematics (Pure)-1, Microbiology-2, Zoology-4, Physics-3, Organic Chemistry-1, Inorganic Chemistry-2 (Permanent-1, Temporary-1), Biochemistry-3, (Enzymology-1, Immuno Chemistry, Membrane Biochemistry/Molecular Biochemistry/Molecular Biology-2)

Qualifications

Essential

- (a) A Doctor's degree or research work of an equally high standard, and
- (b) Consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University. Having regard to the need for developing inter-disciplinary programmes, the degree in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of a very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

1. Candidates for being eligible for recruitment to the posts of Lecturers must have a 1st or high second class (B in the seven point scale) at the Master's level and for determining consistently good record, average of 50-55% or (B in

the seven point scale) may be expected at the two examinations prior to the Master's examinations. The following two examples would illustrate the above:

- (i) A candidate who has obtained 52% marks at the Higher Secondary/Pre-University / Intermediate and 58% at the Degree level would have an average of 55% and as such could be considered.
- (ii) A candidate who has obtained 60% at Higher Secondary/Pre-University/Intermediate and 50% at the Degree level would have an average of 55% and as such could be considered.

Desirable

Lecturers in Commerce & Business Management

For Post No. 1—Financial Management

M. Com/M.B.A. with specialisation in Banking and Finance/Financial Management/Management of Financial Institutions/Investment Management.

OR

Bachelor's degree and Associate/Fellow of the Institute of Chartered Accountants of India or England Institute of Company Secretaries with at least three years experience in a Public Limited company.

For Post No. 2-Production Management

First class graduate or post-graduate degree in Mechanical / Production Engineering with post-graduate qualifications in Business Administration/Industrial Management/Production Planning and Control.

For Post No. 3-Industrial Psychology

First or second class Post-Graduate in Psychology with specialisation in Industrial Psychology.

Note: For the above mentioned three posts preference will be given to those who possess about three years teaching or research experience or three years Managerial experience in Public/Private sector undertakings of repute.

For Post No. 4-Management Information and Data Processing/Management Systems

First or second high class post-graduate degree/diploma in Business Administration or Administrative Management with experience in Management Information Services/Office systems and procedures/work study in office/O.M. techniques/systems Analysis improvements. Preference will be given to those who possess about three years experience in operating at a Management Information Systems & Planning/Handling O.M. applications in offices/integrated data processing.

Lecturer in Economics: Teaching and Research experience.

Lecturers in Education

(i) Consistently good academic record with at least high second class in M.Ed./M.A. (Education)/M.Phil (Education)/M.A. (Psychology) or an equivalent degree of foreign University recognised by the Panjab University:

(ii) Specialisation:

Post No. 1: Educational Measurement.

Post No. 2: Philosophical or Social Foundations of Education.

Post No. 3: Educational Technology.

Post No. 4: Vocational Guidance and Counselling.

Lecturer in French

(i) Diploma de langue from Alliance Francaise or from Sarbonne, the University of Paris.

OR

Professor at Alliance, Francaise, France.

OR

Diploma Supereurd' Etudes Francaise Moderness of Alliance Francaise.

(ii) Training in Audio-visual aids in teaching French.

(iii) Diploma in Phonetics; Diploma or Certificate or Post-Graduate Course in the teaching French language from Central Institute of English and Foreign Languages, Hyderabad.

(iv) Teaching experience in a University Teaching Department to the level of Advanced Diploma in French.

Lecturer in Gandhian Studies

(i) Master's degree as at (b) in essential qualifications should be in Political Science or Economics or History or Philosophy or Public Administration or Sociology.

(ii) Ability to teach Gandhian Thought especially economic thought of Mahatma Gandhi or Theory and practice of Non-Violence.

(iii) Certificate/Diploma in Gandhian Philosophy or published work on Gandhian Thought.

(iv) Ability to guide research.

Lecturer in German

(i) Training in Audio-visual Aids in Teaching German.

(ii) At least two years' teaching Experience at the University level.

Lecturers in Geography

Post No. 1:

(i) Thorough acquaintance with quantitative methods.

(ii) Specialisation in Urban Geography/Political Geography.

Post No. 2:

(i) Specialisation in Geography of Regional Development/Geomorphology.

(ii) Training in methods of field study in Geography.

Lecturer in Journalism

(i) A first or high second class Master's degree in Journalism/Communication from an Indian University or an equivalent qualification from a foreign University,

(ii) At least second class post-graduate Diploma or Bachelor's degree in Journalism/Communication.

(iii) Work experience in any area of mass communication (newspaper/magazine, news agency, public relations, advertising, radio or TV journalism etc.).

(iv) Preferably a Master's degree in a social science subject in addition to (i) above as also teaching experience at University or college level.

Lecturer in Punjabi

Specialisation in Punjabi Gurmat Literature/Punjabi Quissa Poetry/Punjabi Sufi Poetry.

Lecturer in Philosophy

Modern Ethical Philosophies, Indian Philosophy or logic and Methodology of Social Sciences. Knowledge of Sanskrit or other modern European Languages would be considered additional qualifications.

Lecturer in Political Science

Specialisation in Pakistan Studies/Indian Govt. & Politics/Comparative Politics/Modern Political Analysis and Research Methodology with Statistics.

Lecturers in Psychology

Post No. 1:

Specialisation in Child Psychology (Rural)

Post No. 2:

Specialisation in order of Priority:

1 Clinical Psychology

2 Personality

3 Physiological Psychology

Lecturers in Statistics

(i) Specialisation in at least one of the following areas:

(a) Probability: (b) Nonparametric inference.

(ii) Experience of teaching postgraduate classes in Statistics.

Lecturers in Botany

Field of specialisation

Cytogenetics/Radiation Botany/Systematic Mycology with experience of studying Micological herbarium specimen and their maintenance.

Lecturer in Plant Biochemistry

(i) Doctorate degree in Biochemistry or Biosciences or Biological Sciences with specialisation in Plant Biochemistry.

(ii) Specialisation in Plant metabolisms/cellular physiology,enzymology.

Lecturer in Plant Physiology

(i) A first or second class Master's degree of an Indian University in Botany, Biosciences or Agricul-

ture, with specialisation in Plant Physiology as evidenced by published work or an equivalent qualifications of a foreign University,

(ii) Ph.D. in Plant Physiology with published work of high standard and in Journals of repute.

(iii) Advanced training in Physiology of flowering or root formation in relation to hormones.

Lecturers in Biophysics

Specialisation for one post:

Cell Biology (Histochemistry/Animal Physiology/Nuclear Medicine).

Specialisation for other post:

Neurobiology/Neurophysiology /Electrophysiology. Ph.D. or minimum 5 years experience as evidenced by research publication.

Lecturer in Applied Mathematics

Specialisation in the fields of Magnetohydrodynamics and/or Differential equations.

Lecturers in Microbiology

Specialisation for one post:

Doctoral Degree in Microbiology, Research and teaching experience in Virology and Tissue Culture work.

Specialisation for other post:

Doctoral Degree in Microbiology or Botany, Teaching and Research Experience in Mycology.

Lecturers in Physics

Research experience in one of the following fields:

(1) Nuclear Physics (Theory and Experimental)

(2) Particle Physics (Theory)

(3) Solid State Physics (Theory)

(4) Mass Spectrometry

(5) Ultra violet Spectroscopy.

4. Senior Research Fellows-2 (Rs. 600/- p.m. (fixed) each)

Department of Chemical Engineering & Technology

Qualifications

Essential:

First class Master's degree in Chemical Engineering.

Desirable:

Research Experience for one or two years. The fellow will be allowed to supplicate for Ph.D. degree in the Faculty of Engineering & Technology.

5. Research Fellows-2 (Rs. 450/- p.m. (fixed) each).

Department of Zoology

First class M.Sc. in Zoology with good aptitude for higher research work. The term of the fellowship is 3 years in the first instance.

6. Senior Technician-1 (Rs. 300-25-600-EB-25-700)

Department of Chemical Engineering & Technology

Qualifications:

Engineering Diploma with 3 years' experience or ITI certificate with 7 years'

experience or Trade certificate with 15 years' experience in a workshop OR B.Sc. II Class with 3 years' experience in the specialisation.

Specialisation

Pattern making construction and fitting jobs involving good work, paneling, etc.

7. Mechanic Grade-1 (Rs. 200-15-320-EB-20-500)

Department of Chemical Engineering & Technology

Qualifications

B.Sc. IInd class or B.Sc. III class with one year experience OR ITI certificate with one year's experience or Matric Ist class with Science with three years' experience OR 2nd class Matric with Science with 7 years' experience in the specialisation.

Specialisation

Welding (gas & electric)

8. Research Scholar in Psychology-1 (Rs. 400/- p.m. fixed)

Qualifications

First or high second class master's degree in the subject with bright academic record and aptitude for research.

Candidates for the post of Reader who do not possess a Doctoral degree are required to submit 10 typed/cyclo-styled copies of brief resume of their research/published work. Separate application should be submitted for a post in a different Department. 15% posts of Lecturers will be reserved for the members of the Scheduled Castes and 2% for the members of the Scheduled Tribes, but these will be filled up by others if no suitable Scheduled Castes/Scheduled Tribes applicant is available.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees, may however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the office of the Finance & Development Officer, Panjab University, Chandigarh, by making a written request accompanied with self-addressed stamped envelope of 23 x 10 cms.

GUJARAT UNIVERSITY

B.K. School of Business Management

Applications are invited for the following posts in the B.K. School of Business Management, Ahmedabad-9:

(A) Three posts of Reader/Teaching/Research Associate in Business Management.

The selected candidates will be suitably placed either as Reader or Teach-

ing Research Associate under the University Grants Commission pay scale. A copy of minimum qualifications for appointment of teachers in the Department of Business Management can be had from the office of the Registrar, Gujarat University, Ahmedabad-9. Candidates with specialisation in (i) Managerial Economics (ii) Marketing Research or International Business and (iii) Production Management may be preferred. Other things remaining the same, industry experience in managerial position will be preferred.

(B) One post of Placement Officer in the pay scale of Rs. 700-40-900-EB-40-1100-50-1300. The candidate should have the following qualifications:

"A Master's Degree in Second Class preferably in Business Management and 3 years' experience of work in a supervisory capacity with ability to counsel young men and women with maturity and ability to speak and handle correspondence in English."

In addition to basic pay, allowances such as D.A., H.R.A., C.L.A. etc. are admissible as per University rules. The prescribed forms and details of minimum qualifications can be obtained from the office of the Registrar on payment of Rs. 2/- by money order in favour of the Registrar, Gujarat University, Ahmedabad-380009.

Applications on prescribed forms should reach the Registrar within fifteen days from the date of the publication of this advertisement.

**K.C. Parikh
REGISTRAR**

**INDIAN INSTITUTE OF
TECHNOLOGY, KANPUR
IIT POST OFFICE
KANPUR-208016**

Advertisement No. 17/77

Applications are invited for the post of Assistant Engineer (Electrical) in the pay scale of Rs. 650-30-740-35-810-EB-35-880-40-1000-EB-40-1200 in the Works Department at this Institute.

Qualifications & Experience

A Bachelor's degree in Electrical Engineering or equivalent with three years experience in a responsible position such as supervisory experience of electrical installations of large buildings such as laboratories and workshops, etc; and also maintenance, erection of substations, O.H. lines, underground cables, etc.

Qualifications relaxable in the case of highly experienced candidates having diploma in Electrical Engineering in the above areas with good service record. Other things being equal preference will be given to SC/ST candidates.

Post is permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or CPF-cum-Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year, the appointment will be on probation. Besides pay,

posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

Application must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self addressed unstamped envelope of 25 cm x 10 cm size. Application should be accompanied by a postal order for Rs. 7.50 (1.87 for SC/ST candidates).

Applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016 (India) on or before August 31, 1977.

BANARAS HINDU UNIVERSITY (Advertisement No. 8/1977-78)

Applications are invited for the undermentioned permanent posts. The benefit of Provident Fund Pension, Dearness Allowance, House Rent Allowance and City Compensatory Allowance are admissible according to University Rules. The retirement age of University employees is 60 years. The appointment will be made on two years probation on all permanent posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Orders for Rs. 7.50 in favour of the Registrar, Banaras Hindu University towards the application fee. Application forms alongwith the leaflet of information will be supplied free of cost by the Registrar (Selection Committee Section) Banaras Hindu University, Varanasi 221005 on receipt of Rs. 0.40 paise stamped self addressed envelope of 23cm x 10cm size. Candidates called for interview for these posts will be paid actual Railway fare by the Second class plus reservation charges for sleeper, if paid, and or actual Bus fare from the present residence both ways by the shortest route as per University Rules. No. other expenses will be paid.

Applications for each post be sent separately along with attested copies of certificates in support of the qualifications and experience mentioned in the application be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005.

Incomplete application in any respect will not be entertained for consideration.

Those who are in service should apply through proper channel. M.O. or Cheque will not be accepted towards the application fee.

For the post of Lecturers, other things being equal preference will be given to Scheduled Caste/Scheduled Tribes candidates who are considered fit.

Last date for receipt of application is August 31, 1977.

INSTITUTE OF TECHNOLOGY

PROFESSORS — Grade : Rs. 1500-60-1800-100-2000-125/2-2500.

READERS — Grade : Rs. 1200-50-1300-60-1900.

LECTURERS — Grade : Rs. 700-40-1100-50-1600.

1. Professor of Chemical Engineering (One)

Qualifications Essential : (1) Doctorate Degree and/or published work of very high standard. (2) First or second class Master's Degree in Chemical Engg. or an equivalent qualification. (3) About ten years experience in responsible position in Teaching/Research/Industry. (4) Specialisation in one or more of the following fields : Transport processes/Thermodynamics/Fluid Dynamics/Heat Transfer/Mass Transfer/Reaction Engineering/Separation techniques. **Desirable :** (1) Corporate membership fellowship of professional organisations/learned societies. (2) Demonstrated ability in teaching, guiding and carrying out independent research as evidenced by research publications of good quality in journals of repute.

2. Reader in Chemical Engineering (Three)

Qualifications Essential : Doctorate Degree or published work of an equally high standard in Chemical Engg./Technology/Chemistry. (2) First or second class Master's Degree in Chemical Engg./Technology/Chemistry or an equivalent qualification. (3) About five years experience in responsible position in teaching research/industry. (4) a. Good knowledge of Computer-aided Design of Chemical Plants and equipments/systems Engineering/simulation and optimization techniques (for one post only). b. Specialisation in one or more of the following fields: Petroleum Refining Engg. Transport Phenomena/Unit Operations/Nuclear Engg./Thermodynamics/Mass Transfer/Reaction Engg./Heat Transfer/Fluid Dynamics/Project Engg. Process Plant and equipment design separation techniques Biochemical Engineering (for the second post only). c. Specialisation in one or more of the following fields: Petroleum Technology Petrochemicals/High Polymer tech/Synthetic Fibre Technology/Design and Development of processes and Projects/Heavy chemical and fertilizers/Fine and Pharmaceutical Chemicals/Oils, soaps and detergents/Cellulose technology/Reactor control technology/kinetics and catalyses (for the third post only). **Desirable :** (1) Evidence of original work in Research/Design Development. (2) Membership of professional bodies/learned societies.

3. Reader in Electrical Engineering (One)

Qualifications Essential : (1) Doctorate Degree or published work of an equally high standard. (2) A first or second class Master's Degree in the subject or an equivalent qualification. (3) About five years experience in responsible position in teaching/industry/research. (4) Specialisation in Electric Drives and Power Electronics or Computer Sciences. **Desirable :** (1) Industrial experience. (2) Experience of guiding research. (3) Membership of professional bodies.

4. Reader in Pharmaceutical Chemistry (One)

Qualifications Essential : (1) Doctorate Degree in Pharmaceutical Chemistry (Medical Chemistry) or published work of an equally high standard. (2) A first or second class Master's Degree (M. Pharm.) with specialisation in Synthetic Drugs or an equivalent qualification. (3) Five years experience in responsible position in Teaching research/industry. **Desirable :** (1) Specialisation in Synthetic Drugs, Syntheses and Analyses particularly I.P. Monographs/experience in Pharmaceutical Industry. (2) Research publication in reputed Indian and foreign journals. (3) Membership of learned bodies and societies.

5. Reader in Pharmacology (One)

Qualifications Essential : (1) Doctorate Degree in the subject or published work of an equally high standard. (2) A first or second class Master's Degree in the subject M. Pharm. (Pharmacology) or M. D. (Pharmacology). (3) About five years experience in responsible position in Teaching/Research Industry. (4) Experience of guiding research in Pharmacology. **Desirable :** (1) Specialisation in Pharmacodynamics (Drug Design) Bio Chemical Pharmacology. (2) Research publication in reputed Indian or foreign journals. (3) Membership of learned bodies and societies.

6. Lecturer in Pharmaceutics (One)

Qualification Essential : (1) Consistently good academic record with first or high second class (B+) Master's Degree (M. Pharm.) with specialisation in Pharmaceutics or an equivalent degree of a foreign University. (2) Some experience in Teaching/Research/Industry. **Desirable :** (1) Doctorate Degree in the subject.

7. Lecturer in Chemical Engineering (One)

Qualifications Essential : (1) Consistently good academic record with first or high second class (B+) Master's Degree in Chemical/Engg./Chemical Technology or an equivalent degree with special knowledge in one or more of the following : Heavy Chemical Industries/Process Development and

Project Design Fermentation Technology/Biochemical Engineering/High Polymer Technology/Cellulose Technology/Petroleum Technology/Process Reactor dynamics and control Technology. (2) Some experience in Teaching/Research/Industry. **Desirable :** (1) Doctorate Degree in Chemical Engg./Chemical Technology. (2) Publications in Journals of repute.

8. Lecturer in Metallurgy (One)

Qualifications Essential : (1) Consistently good academic record with first or high second class (B+) Master's Degree in the subject or an equivalent degree of a foreign University. (2) Some experience in teaching research/industry with specialisation in one or more of the following fields : Physical Metallurgy/Industrial Metallurgy Extractive Metallurgy/Mechanical Metallurgy/Industrial Management/Metallurgical Design Fuels and Furnace Technology. **Desirable :** (1) Doctorate Degree in the subject. (2) Original work as evidenced by Technical Publications/Project reports in any aspect of Metallurgy. (3) Specialisation in Industrial Management/Metallurgical Design/Fuels and Furnace Technology

9. Lecturer in Electrical Engineering (Three)

Qualifications Essential : (1) Consistently good academic record with first or high second class (B+) Master's Degree in Electrical/Electronics Engg. with specialisation in any of the following : (i) Control Systems, (ii) Instrumentation, (iii) Power Electronics, (iv) Power Systems, (v) Electrical Drives, (vi) High Voltage Engg. or an equivalent degree of a foreign University. (2) Some experience in Teaching/Research/Industry. **Desirable :** (1) Doctorate Degree in the subject.

10. Lecturer in Civil Engineering (Two)

Qualifications Essential : (1) Consistently good academic record with first or high second class (B+) Master's Degree in the subject or an equivalent degree of a foreign university with specialisation in Hydraulic Engg./Structural Engg. Soil Mechanics & Foundation Engg./Architecture & Planning Public Health Engg./Highway Engg./Surveying & Photogrammetry. (2) Some experience of teaching/Research/Industry. **Desirable :** (1) Doctorate Degree in the subject. (2) Publications of merit.

Note : Qualifications relaxable for the post in Surveying and Photogrammetry for recognised field experience.

Note : Those who have obtained Doctorate Degree in the subject concerned will also be considered for all the above posts in the Institute of Technology irrespective of the fact whether they have Post-Graduate Degree in the subject or not.

FACULTIES OF SCIENCE & HUMANITIES

11. Professor of Philosophy (One)

Qualifications Essential : (1) Doctorate Degree or published work of an equally high standard. (2) A first or second class Master's Degree in the subject or an equivalent qualification. (3) About ten years experience of Post-Doctoral Research and or teaching at a University or College. (4) Ability to guide research of a high standard.

12. Professor of Economics (One)

Qualifications Essential : (1) Doctorate Degree or published work of an equally high standard. (2) A first or second class Master's Degree in the subject or an equivalent qualification. (3) About ten years experience of Post-Doctoral Research and or teaching at a University or College. (4) Ability to guide research of a high standard.

13. Professor of Education (One)

Qualifications Essential : (1) Doctorate Degree or published work of a high standard. (2) A first or second class Master's Degree in Education or an equivalent qualification with Master's Degree in any other subject. (3) About ten years experience of Post-Doctoral Research and/or teaching at a University or College. (4) Ability to guide research of a high standard.

14. Reader in Botany (One)

15. Reader in Agricultural Statistics (One)

16. Reader in Chemistry (Organic)

Qualifications Essential : (1) Doctorate Degree or published work of equally high standard. (2) A first or second class Master's Degree in the subject or an equivalent qualification. (3) Five years experience of Post-Doctoral Research and/or teaching at a University or College. (4) Experience of guiding research. **Desirable :** (1) Specialisation in Systematic Botany/Mycology and Plant Pathology/Phycology/Plant Ecology (applicable for post No. 15 only). (2) Specialisation in sampling or design of experiments applied to Agriculture or production side (applicable for post No. 16 only). (3) Capacity for independent research as evidenced by the applications (applicable for post No. 17-only).

17. Lecturer in Chemistry (Organic) (One)

18. Lecturer in Chemistry (Inorganic) (One)

Qualifications Essential : (1) A Doctor's Degree or research work of equally high standard; and (2) Consistently good academic record* with first or high second class (B in the seven point scale) Master's Degree in the subject or an equivalent

degree of a foreign University.

*Average of 50-55% (or B in the seven point scale) at the two examinations prior to the Master's Examination.

19. Lecturer in Entomology (One)

Qualifications Essential : (1) A Doctor's Degree or research work of an equally high standard; and (2) Consistently good academic record* with first or high second class (B in the seven point scale) Master's Degree in Entomology and/or Agric, Zoology or an equivalent degree of a foreign university.

*Average of 50-55% (or B in the seven point scale) at the two examinations prior to the Master's Examination.

20. Lecturer in Genetics & Plant Breeding (One)

Qualifications Essential : (1) A Doctor's Degree or research work of an equally high standard; and (2) Consistently good academic record* with first or high second class (B in the seven point scale) Master's Degree in Genetics and Plant Breeding OR Agric. Botany or Botany with specialisation in Genetics and Plant Breeding or an equivalent degree of a foreign University. **Desirable :** (1) Experience in Microbial Genetics/Molecular Genetics Cytogenetics as evidenced by published work. (2) Ability to teach in Hindi & English medium.

The following clauses will be applied in cases posts at Sr. No. 17, 18, 19 and 20.

Having regard to the need for developing inter-disciplinary programmes, the degrees at essential (1) and (2) above may be in the subject.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of qualifications prescribed at essential (2) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

INSTITUTE OF MEDICAL SCIENCES

Lecturers — Grade : Rs. 700-40-1100-50-1600 plus N.P.A. as per rules.

21. Lecturer in Radiotherapy & Radiation Medicine (One)

Qualifications Essential : (1) M.B.B.S. or equivalent qualification recognised by Medical Council of India, (2) M.D. (Radiotherapy), M.D./M.S. (Radiology), Speciality Board of Radiology (U.S.A.), F.F.R. (3) The requisite recognised Post-Graduate qualification in the subject and three years teaching experience as Registrar in Radiotherapy and Nuclear Medicine of which one year should be after Post-Graduate qualification. **Desirable :** (1) Research publication in the subject. Experience of radioactive isotopic work for diagnosis and therapy purposes in a teaching Hospital.

22. Lecturer in Anaesthesiology (Three)

Qualifications Essential : (1) M.B.B.S. or equivalent qualification recognised by the Medical Council of India. (2) M.D.M.S. (Anaesth.), F.F.A.R.C.S. (by examination) speciality Board of Anaesthesiology (USA). (3) The requisite recognised Post-Graduate qualification in the subject and three years teaching experience as Registrar in Anaesthesia of which one year should be after Post-Graduate qualification. **Desirable :** (1) Good academic career. (2) Publications in Scientific Journal.

UNIVERSITY OF NORTH BENGAL

Applications in prescribed forms are invited for the posts of Lecturers for the following departments in the pay scale of Rs. 700-40-1100-50-1600/- plus admissible allowances; (1) Economics, (2) Bengali, (3) Mathematics (specialisation Statistics); (4) Nepali, (5) Commerce.

The candidates who applied earlier for the posts of Lecturer in Mathematics & Nepali in response to our advertisement/10/R-76 dt. 28.6.77 need not apply again.

Essential qualifications : (a) a Doctor's degree or published work of an equally high standard; and (b) consistently good academic record with 1st or high 2nd class (B plus) Master's degree in a relevant or allied subject or an equivalent degree of a foreign University. Other provisions relating to the University Grants Commission revised pay scales will also apply as necessary.

Prescribed application forms may be obtained from the office of the Registrar personally on payment of Rs. 1/- in cash at the University Cash Counter on any working day between 11 a.m. and 3 p.m. (Saturday 1 p.m.) or by sending a self-addressed stamped (0.55 paise) envelope of 25 cm x 13 cm along with a remittance of Re. 1/- only by Crossed Indian Postal Order in favour of the University of North Bengal. Filled in application forms (5 copies) must reach the office of the Registrar, PO. North Bengal University, Dist. Darjeeling within 21 days from the date of publication.

REGISTRAR

Applications on the prescribed form are invited for the following posts:

S.No.	Department	Designation
1.	Faculty of Law: (a) Evening Law Centre No. I (b) Evening Law Centre No. II	One Professor Specialization: Labour Law (i) One Professor Specialization: Industrial Property Law—Patents, Trade and Copy Rights. (ii) Two Lecturers (Temporary) One Reader
2.	Mathematics	(i) One Reader in Japanese Studies & Literature.
3.	Chinese & Japanese Studies	(ii) One Lecturer in Japanese Studies Two Lecturers
4.	Sanskrit	(i) One Professor in Philosophy
5.	South Delhi Campus	(ii) One Reader in Philosophy (iii) One Professor in Sanskrit (iv) One Reader in Sanskrit (v) One Reader in History (vi) One Reader in Business Economics (vii) Two Readers in Political Science (viii) One Reader in Mathematics One Deputy Registrar (for South Delhi Campus) Research Associate
6.	Central Office	
7.	Urdu	

The Scales of Pay of the posts are:

1. Professor: Rs 1500-60-1800-100-2000-125/2-2500.
2. Reader Rs. 1200-50-1300-60-1900.
3. Lecturer Rs. 700-40-1100-50-1600.
4. Deputy Registrar Rs. 1100-50-1600.
5. Research Associate: Rs. 700-40-900-EB-40-1100-50-1300

All posts carry D.A., C.C.A. and H.R.A. as admissible under the rules in force in the University from time to time.

I. Essential Qualifications for:

1. Professorships

A Scholar of eminence.
Independent published work of high standard and experience of teaching Postgraduate classes and guiding research for a considerable period desirable.

2. Readerships

Good academic record with first or high second class Master's Degree in the subject concerned with a Doctor's Degree or equivalent published work.

Independent published work (in addition to the published work mentioned above) with at least 5 years' teaching experience in Honours/Postgraduate classes essential.

3. Lectureships (Excepting for posts in Law):

Good academic record with a first or high second class Master's Degree or an equivalent degree of a foreign University in the subject concerned.

Note: (Second Class would mean at least 50% marks in the subject or equivalent grade).

Desirable

(i) A Doctor's Degree or Evidence of Research work of equivalent standard in the subject concerned. (ii) Teaching experience of Degree/Postgraduate classes.

Provided if a teacher is not a Ph.D./M.Phil./M.Litt. at the time of his/her appointment and does not qualify himself/herself for the award of Ph.D./M. Phil/M. Litt. Degree from a recognised University in a subject which is being taught by him/her within a period of five years from the date of his/her appointment or does not give evidence of research work within that period in the subject concerned, he/she shall not

be entitled to any future increments after the expiry of the said period of five years till such time he/she fulfils the above mentioned requirements,

4. Lectureships in Law (E.L.C. No. II):
Consistently good academic record with a first or high second class (B+) Master's Degree in Law or an equivalent Degree of a Foreign University in the subject concerned.

Explanation: Consistently good academic record would mean overall record of all assessments throughout the academic career leading to the Master's Degree which should at least be B+ or high Second Class.

Essential Qualifications for:

5. Deputy Registrar

A Second Class Master's Degree and experience of educational administration at the executive level for at least 8 years.

6. Research Associateship

(1) A First or High Second Class Master's Degree in Urdu. (2) Proficiency in Persian, English and Hindi languages. (3) Experience of research and translation work and evidence of considerable published translation work.

Note: Initial appointment will be for a period of three years extendable by another 2 years only. In no case the tenure will extend beyond 5 years in all.

II. Special/Desirable Qualifications for:

1. Professorship in Labour Law

Grounding in: (i) Comparative Labour Law, (ii) International Legal Developments for the protection of "Workers' Rights" and human rights, generally, (iii) Labour economics and labour statistics.

2. Professorship in Industrial Property Law

Grounding in: (i) Comparative and International Law relating to industrial and intellectual property; (2) Property Law including succession; (3) Taxation; (4) International Trade and economic law; (5) Law of industrial licensing and "know-how".

3. Readership in Philosophy

Specialization in Indian Logic and Epistemology together with sound knowledge of original Sanskrit texts.

4. Professorship & Readership in

Sanskrit:

Sahitya/Darhana/Epigraphy.

5. Readership in History

Specialization in American/British-European/Russian History.

6. Readerships in Political Science

For First Post: Comparative Politics (Comparative Politics here does not mean a comparative study of the selected constitution of some countries). Candidates should have specialisation in the field of comparative political analysis which is emerging as a new body of knowledge as a result of the impact of behaviouralism and post-behavioural revolution in Political Science.

For Second Post: Political Theory.

7. Readership in Mathematics (South Delhi Campus):

Specialisation in any one of the following topics: Banach Algebras, Abstract Harmonic Analysis, Algebraic Topology, Graph Theory.

8. Lectureships in Sanskrit

"Sahitya" & "Darshana".

9. Readership in Japanese Language and literature

High proficiency in Japanese language.

10. Lectureship in Japanese literature

Ability to consult Japanese language books and experience in using Japanese source materials in research.

11. Research Associateship in Urdu

Experience of teaching Postgraduate courses preferable.

12. Deputy Registrar

Experience of University administration and familiarity with the working of University bodies and institutions including admissions, College administration, Accounts rules relating to fixation of pay and inspection of Colleges.

The prescribed application form can be had from the Information Office of the University either personally or by sending a self-addressed envelope (size 5"×11") with postage stamps worth Rs. 2.55.

Selected candidates will have to produce the original documents relating to their age, qualifications, experience, etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, mark-sheets, published research articles, etc. should reach the undersigned not later than 10th September, 1977.

Note:

1. It will be open to the University to consider the names of suitable candidates who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all posts on the recommendations of the Selection Committee.
2. Canvassing in any form by or on behalf of the candidates will disqualify.
3. Candidates from outside Delhi for teaching posts, called for interview will be paid contribution towards travel expenses equivalent to 1½ single Second Class Rail fare.
4. Those who had applied in response to the earlier advertisement for the post of Reader in Mathematics, need not apply again, but in case they have any additional information to supply, they may do so.

REGISTRAR
DELHI UNIVERSITY

**NAGARJUNA UNIVERSITY
NAGARJUNANAGAR
ADVERTISEMENT**

NU/Estt/77-78

Dt. 5-8-1977

Applications in prescribed forms are invited so as to reach the Registrar on or before **6th September, 1977** for the following posts in the Nagarjuna University. Each application must be accompanied by a Crossed Indian Postal Order or a Demand Draft for Rs. 15/- in favour of the Registrar, Nagarjuna University, Nagarjunanagar 522 510 (A.P.).

2. Mathematics

1. Functional Analysis for one Reader's post.
2. Complex Analysis or Algebraic Geometry for the other.

3. English

British Literature or Indian Writing in English or Commonwealth Literature or Literary Criticism for Reader's post.

4. Commerce

1. Personnel Management and Industrial Relations for one Reader's post.

M.Phil. or Ph.D. Degree or evidence of published work and a certificate of Proficiency in Field work.

(c) Deputy Librarian

- (a) First or Second class M.A./ M.Sc/ M.Com and a first or second class B. Lib. Science or Diploma in Library Science. The Degree of M. Lib. Science being a preferential qualification.
- (b) At least 5 years experience as Librarian or in a responsible professional capacity in a Library.
- (c) Good academic qualifications and research experience with publications.

(d) Physical Director

- (a) A master's degree in Physical Education or a master's degree in Arts/ Science etc. with a postgraduate diploma in Physical Education. Preference will be given to a person holding master's degree in Physical education.
- (b) At least 5 years experience of organising games and sports at University level. Proficiency in games upto inter University and national level

(e) Controller of Examinations

1. First or Second class Degree of any University or its equivalent.
2. Experience in an administrative capacity for a period of 5 years or as Assistant Registrars/Assistant Controller of Examinations or Finance for a period of 5 years.

(f) Assistant Registrars

1. First or Second class degree of any University or its equivalent.
2. Experience in an administrative capacity for a period of 3 years or as an Office Superintendent for a period of 5 years.

Note

1. Internal candidates if qualified are also eligible to apply for direct recruitment.
2. Those who have applied earlier in response to the Advertisement No. NU/Ts/76/77 dated 1-9-1976 need not apply. Any relevant additional information may, however, be furnished.
3. Reservations to Scheduled Castes, Scheduled Tribes and Backward Classes are made at 14%, 4% and 25% respectively for the posts of Lecturers.

Requisitions for the prescribed application forms may be made to the Registrar, Nagarjuna University, Nagarjunanagar accompanied by a self-addressed and a stamped-envelope, and a Demand Draft or crossed Indian Postal Order for one rupee in favour of the Registrar, Nagarjuna University Nagarjunanagar Pin 522 510 (A.P.)

The University reserves the right to fill or not to fill any or all of the above posts.

Sd/-

(Srimannarayana Kilaru)
REGISTRAR

Subject	Professors	Readers	Lecturers
1. Economics	—	2	1
2. Mathematics	—	2	1
3. English	—	1	1
4. Commerce	—	2	2
5. Archaeology	—	1	1
6. Telugu	—	2	2
7. Physics	—	—	1
8. Chemistry	—	1	—
9. Botany	—	1	—
10. Zoology	1	1	—

Other Posts:

1. Deputy Librarian 1
2. Physical Director 1
3. Controller of Examinations 1
4. Assistant Registrars 2

Scales of Pay:

Professor:

Rs. 1,100-50-1,300-60-1,600.

Reader: Rs. 700-50-1,250.

Lecturer: Rs. 400-40-800-50-950.

The above scales are likely to be revised.

Deputy Librarian:

Rs. 700-50-1,250.

Physical Director:

Rs. 400-40-800-50-950.

Controller of Examinations:

Rs. 700-50-1,250.

Assistant Registrar:

Rs. 400-40-800-50-950.

Qualifications:

(a) Professors & Readers

Essential

1. A first or high second class Master's Degree of an Indian University or an equivalent qualification from a foreign University in the subject.
2. A research Degree of Doctorate Standard or published work of a high standard in the subject.
3. Experience of teaching Honours or post-graduate classes for a period of ten years for Professors/ five years for Readers, and experience of guiding research for both the posts.

Desirable:

The following specialisations are desirable.

1. Economics

Mathematical Economics for one Reader's post.

2. Either Advanced Banking and Monetary Policy or Industrial Economics for the other Reader's post.

5. Archaeology

Indian Art and Architecture with special reference to Buddhism for Reader's post.

6. Telugu

1. Grammatical Theories for one Reader's post.
2. Linguistics for another Reader's post.

7. Chemistry

Inorganic or Physical or Physical Organic Chemistry.

8. Botany

Developmental Morphology

9. Zoology

Limnology for the Professor's post. Physiology/Fisheries/Limnology/ Cytology for Reader's post.

(b) Lecturers

Essential

1. At least a first or high second class Master's Degree of an Indian University or an equivalent qualification of a foreign University.
2. A research degree or a good record of research work.

Desirable

1. Telugu:

1. M.A. (Sanskrit)/Siromani/Vidya Praveena/Basha Praveena.
2. M.A. (Telugu) I or II class of a recognised University.
3. Ph.D. in Telugu is preferable.

2. Archaeology

Specialisation in Epigraphy or Numismatics or environmental Archaeology.

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 15/77-78

Applications on the prescribed form are invited for the following posts :

Candidates must possess Medical Qualifications included in first or second Schedule or Part II of the third Schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of educational qualifications included in Part II of third schedule should fulfil the conditions stipulated in Section 13(3) of the Indian Medical Council Act, 1956. Must possess a basic University or equivalent qualification entered in Schedules under State/Central Medical Registration Act. (For the posts at Sl. Nos. 1 & 2 only).

1. Reader in Physiology (Temporary)
Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications :

M.D., M.Sc., Ph.D., D.Sc., (Physiology). Assistant Professor/Lecturer in Physiology for three years in a Medical College.

Desirable: Research Publications. Experience in Neurophysiology or Cardiac Physiology.

2. Lecturer in Ocular Pathology. Department of Ophthalmology. Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications: M.D. (Path.), M.D. (Path. & Bact.), M.D. (Path. with Bact.), M.Sc. (Med. Path.), Ph.D. (Path.), M.Sc. (Path.), Speciality Board of Pathology (USA). M.R.C. Path. (Lond.), M.C.P. (Australia) after examination.

The requisite recognised postgraduate qualification in the subject and three years teaching experience as Tutor/Clinical Pathologist/Resident Pathologist/Demonstrator in Pathology of which one year should be after postgraduate qualifications.

Desirable: Experience in Ocular Pathology and aptitude for research in Ophthalmic Pathology.

3. Lecturer in Radiophysics. Scale Rs. 700-40-1100-50-1600 plus allowances (Department of Radiology).

Qualifications: M.Sc. (Physics). At least 6 months BARC training in Radiophysics.

Desirable: X-Rays as a special paper in M.Sc. Teaching experience in Radiophysics. Aptitude for research. Published papers.

4. Reader in Chemistry (Bio-Chemistry)
—Plan Post. Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications: (a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching postgraduate classes and some experience of guiding research.

Note: The teaching experience may be relaxed in case of highly qualified candidates otherwise. Those who have already applied in response to previous

advertisement No. 19/76-77 need not apply again.

5. Co-ordinator (B. E. Course, Z.H. College of Engineering & Technology)
Scale Rs. 1500-60-1800 plus allowances.

Qualifications: A first or a high second class basic degree in Electrical/Civil/Mechanical Engineering. Ordinarily postgraduate degree in any branch of Engineering. Ordinarily ten years experience of which five years should be in a position of responsibility in teaching in an Engineering institution of a degree standard and/or research.

Desirable: Published research work.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self addressed envelope of 23×10 cm. Last date for receipt of applications is **25th August, 1977**. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

(Jamalur Rahman)
REGISTRAR

GARHWAL UNIVERSITY SRINAGAR-(GARHWAL)

Wanted one Professor in the subject of Chemistry in the scale of Rs. 1500-60-1800-100-2000-125/2-2500/-.

Qualifications: (a) A doctorate in the subject of study concerned or a published work of a high standard in that subject and (b) consistently good academic record (that is to say the overall record of all assessments throughout the academic career of a candidate), with a first or high second class (i.e. more than 54% marks), in master's degree in the subject concerned or equivalent degree of foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work, is of a very high standard, it may relax any of the qualifications specified in sub-clause (b).

Experience: Candidate should have at least 10 years experience of teaching post-graduate classes and guiding research.

The prescribed application form and detailed particulars can be had free of cost from the Registrar's office either personally or by sending a self-addressed envelope (5"×11") with postage stamps worth Rs. 2.40. Applications accompanied by attested copies of degree and other certificates and published research articles etc. should reach the undersigned by **29th August, 1977**.

Chander Bhan
REGISTRAR

SAURASHTRA UNIVERSITY

Applications in the prescribed forms are invited for the undermentioned posts in the various Departments of the University. Application forms alongwith detailed requirements of qualifications and experience for these posts will be available from the Registrar, Saurashtra University, University Campus, Kalawad Road, Rajkot-5 on sending a self addressed envelope of the size 23 cm. × 11 cm. with postage stamps worth Rs. 1.15. Candidates should have consistently good academic record.

Applications (seven copies) accompanied by Indian Postal Order for Rs. 5/- crossed in favour of the Registrar, Saurashtra University, should reach this office on or before **10-9-77**. Those who have applied in response to the earlier advertisement need not apply again.

1. Department of Chemistry

(a) **READER 1 Post.** Qualified to teach Marine Chemistry

(b) **LECTURER 1 Post.** Qualified to teach Marine Chemistry

(Candidates qualified in branches other than Marine Chemistry, may be considered, if they apply.)

2. Department of History

(a) **PROFESSOR 1 Post.** Preferably in Modern Indian History.

(b) **LECTURER 1 Post.**

3. Department of Bio-Sciences

(a) **READER 1 Post.** Basic degree in Zoology. Specialization in Cell Biology/Molecular Biology/Animal Physiology/Animal Ecology/Endocrinology/Fish-Biology/Marine Biology/or Cyto-Genetics.

(b) **LECTURER 1 Post.** Basic degree in Botany, Zoology or Experimental Biology. Specialization in Cytogenetics, Environmental Biology including Behavioural Ecology, Morphology and Embryology of plants/Animals, Marine/Algal/Fish Resources and systematics of Plants or Animals, Cell Biology, Bio-Physics and Bio-Chemistry.

Pay Scales

1. Professor : Rs. 1500-60-1800-100-2000-125/2-2500

2. Reader : Rs. 1200-50-1300-60-1600-Assessment-60-1900.

3. Lecturer : Rs. 700-40-1100-50-1300-Assessment-50-1600.

Reservation for Scheduled Caste and Scheduled Tribe candidates will be 5% and 10% respectively.

Age ordinarily not exceeding 55 years. The posts are permanent and carry benefit of Contributory Provident Fund as per University rules. Dearness Allowance and House Rent Allowance will be paid as per University Rules. Higher initial salary in the scale may be considered in case of exceptionally qualified and experienced persons. Qualifications and experience—relaxable in special cases. Candidates in employment must submit their application through their present employer. Those knowing Gujarati and/or Hindi will be preferred.

V.M. Desai
REGISTRAR

Agricultural VCs Meet



Sardar S. S. Barnala, Union Minister for Agriculture & Irrigation, inaugurating Vice-Chancellors Conference of Agricultural Universities in New Delhi

CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF COCHIN

No. Ad. A-2. 66/75

Notification

Applications are invited from qualified persons for appointment to the following vacancies in the teaching posts of the University:

Order Coupon. The receipt of remittance should be attached to the requisition for the forms.

Scale of pay

(a) Professor—Rs. 1200-50-1650-50/2-1750.

Candidates will have to appear for interview if called for, at their own cost.

Completed applications should reach the University Office on or before 9-9-1977.

Appointments to the posts notified will be made strictly in accordance with the Section 6(2) of the Cochin University Act 1971 (Act 30 of 1971).

Note: Candidates from abroad with Doctorate in the concerned subjects with publications of high standard and sufficient teaching experience at post graduate level may apply by giving their bio-data in plain paper, to the Registrar, University of Cochin, Hill Palace, P.O., Tripunithura, Kerala together with a Bank Draft/Postal Order for Rs. 25/- as Registration Fee.

REGISTRAR

* * *

SAMBALPUR UNIVERSITY

JYOTI VIHAR: BURLA

No. 31834/TDS Dated the 8.8.77

Applications in the prescribed forms are invited for the following post in the P.G. Department of Statistics of the Sambalpur University as stated below.

Lecturer—One in Statistics

Scales of Pay—Rs 700-40-1100-50-1600/-

Age of retirement—60 years

Qualification

- At least a 1st or high second class Master's Degree in the respective subject with B+ or 55% of marks.
- At least 2 years Teaching/Research experience.
- A Doctorate Degree or Published work or an equivalent standard.

Qualification (i) as mentioned above may be relaxed if the research work of a candidate as evident either from his/her thesis or from his/her published work is of very high standard.

Seven copies of the application forms will be supplied from the University Office to each candidate in person on cash payment of Rs. 10/- (Rupees ten) only. Candidates intending to receive forms by post are required to send (a) Crossed Postal order of Rs. 10/- payable to the Finance Officer, Sambalpur University, Jyoti Vihar, Burla (b) a self addressed envelope (23 cm x 10 cm) with postage stamps worth Rs. 2/- affixed to it with the words "APPLICATION FORM FOR TEACHING POSTS IN SAMBALPUR UNIVERSITY" superscribed on it. Money Order/Cheque will not be entertained.

The last date of receipt of applications in the office of the University at Jyoti Vihar, Burla, Sambalpur (Orissa) is 10.9.77. The candidates will be required to appear for an interview before a Selection Committee at their own expenses.

All communications should be addressed to the Registrar by designation only.

G.P. Guru
REGISTRAR

Department	Name of post	No. of vacancy	Area of specialisation
(1)	(2)	(3)	(4)
(1) Department of Applied Chemistry	Professor	1	Polymer Chemistry
	Reader	1	Analytical Chemistry
(2) Department of Electronics	Reader	1	Electronics & Communication Systems
	Lecturer	2	Electronics & Communication Systems
(3) Department of Hindi	Lecturer	2	
(4) Department of Industrial Fisheries	Reader	3	Fish Processing—1 Fishing Craft & Gear—1
	Lecturer	1	Fishery Economics—1
(5) Department of Law	Reader	2	Fishery Economics Criminal Law or Tax Law/ Labour Law
(6) Department of Marine Sciences	Professor	1	Marine Geology—1
	Lecturer	6	Microbiology } —1 (Industrial) } Microbiology } —1 (Marine) } Chemistry—1 Marine Biology—1 Marine Geology—1 Geophysics—1
(7) Department of Mathematics	Professor	1	Applied Mathematics
(8) Department of Physics	Reader	1	
	Lecturer	1	
(9) Department of Rubber Processing Technology	Lecturer	1	Rubber Processing and Technology
(10) School of Management Studies	Professor	1	
	Reader	2	
	Lecturer	2	
	Teaching Assistant	2	
(11) Department of Ship Technology	Professor	2	Ship Design/Ship Motion and Manoeuvrability/Resistance and Propulsion of Ships/Strength of Ships and Practical Ship Building/Ship Building Technology.
	Reader	3	
	Lecturer	5	Applied Thermoscience/Materials Science/Fluid Mechanics/Solid Mechanics/Elec. and Electronics Engg. (with Computer Science background)

Prescribed forms in quadruplicate can be had from the Registrar, University of Cochin, Cochin Palace P.O., Tripunithura-682301 on payment of Rs. 5/- by Cash or Money Order specifying the purpose in the Money Order Coupon. If a person intends to apply for more than one post, application in quadruplicate for each post should be submitted separately. The posts for which the application forms are required, should be specifically indicated in the Money

(b) Reader—Rs. 850-50-1350-50/2-1450.

(c) Lecturer—Rs. 600-40-800-50-1100-50/2-1250.

(d) Teaching Assistant Rs 495-20-535-25-760-25/2—835.

The details of qualification, age, registration fee etc. of each post can be had from the University Office along with the application forms. Those who are in service should forward their applications through proper channel.

UNIVERSITY NEWS

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1977

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Opinions expressed in the articles and reviews are individual and do not necessarily reflect the policies of the Association

Editor : ANJNI KUMAR

U.G.C. Review Committee reports to the Ministry of Education

The Review Committee on the University Grants Commission appointed by the Government of India under the chairmanship of Dr. V.S. Jha submitted its recommendations to the Ministry of Education in Delhi. The Committee was set up in August 1974 to review the functioning of the University Grants Commission with particular reference to coordination and determination of standards of higher education and to suggest measures for more effective discharge of its responsibilities. Some of the recommendations of the Committee are given below:

The President of India should be the Visitor of all universities in the country and the Commission should be the advisory agency for the Visitor in matters relating to university education. All acts and statutes of universities should have the prior approval of the Visitor. Appointments of vice-chancellors of all universities should be subject to prior approval of the Visitor. The Visitor, on the advice of the Commission, should have the power to issue directions to all universities in the country in matters affecting coordination and standards.

The Commission should have 18 members instead of 12 as at present. The additional six members may be:

- (i) two college teachers (including principals) one of whom may, as far as possible, be from a women's college,
- (ii) one person from the field of secondary education,
- (iii) one expert in the field of rural higher education,
- (iv) one expert in the field of non-formal education,
- (v) Secretary, Planning Commission, as an ex-officio member.

The choice of members should be so made that broad disciplines as well as universities in different parts of the country find expression in the Commission.

The Commission should organize annual conference of education ministers, vice-chancellors, selected college principals and state education authorities in different parts of the country. Also some meetings of the Commission itself should be held at places other than Delhi every year.

The Commission's Office should have two main divisions to deal with (a) educational planning and policy, and (b) administration and grants.

The planning and policy division should be headed by an academician of standing who possesses expertise in planning, and should have four senior academicians belonging to different broad disciplines who should be in charge of research and evaluation in their respective fields and be allotted areas for establishing regular contact with universities and colleges.

Senior academicians should be appointed, on a tenure basis on deputation from the academic field. Their terms of deputation should be generous and facilities of accommodation and opportunities for research work assured. Other academic staff in the Commission's Office should also be appointed on deputation from educational institutions.

The Secretary should head the administration division and be answerable to the Chairman. The post should be filled on a tenure

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10+2+3 Pattern of Education Window Dressing ?

G. D. Sharma*

There was a time when a great deal of emphasis was laid on the introduction of the new 10+2+3 pattern of education. All the State Governments were requested to change over to the new pattern. But now rethinking on the introduction of the new pattern has started.

Those who are in education and concerned with it would recall that the desire for a uniform pattern of education was expressed by the Committee on Emotional Integration (1962), headed by Dr. Sampurnanand. The Committee suggested that a uniform fifteen years of first-degree pattern of education should be introduced throughout the country. The Education Commission (1964-66), headed by Dr. D.S. Kothari, and the Committee of Members of Parliament on Education (1967), headed by Dr. Triguna Sen, endorsed the same views. The idea was given a final shape by the National Committee on 10+2+3 Educational Structure, 1973.

Under the new pattern it was suggested that there should be ten years of school education, two years of higher secondary or pre-degree courses with educational and practical training, and three years of degree courses.

It was also held that ten years of schooling and two years integrated higher secondary/pre-degree courses would form terminal points for a large majority of students who are seeking jobs after schooling.

It may be stated that in 14 States and Union Territories, the first-degree course is of 14-year duration. In another 12 States and Union Territories, it is of 15-year duration. In one State and one Union Territory it is of 16-year duration. The sub-division of 14 and 15 years' duration in school and college levels vary from State to State. In the States and the Union Territories where the 15-year duration for the first degree is obtaining, the breakdown of the type 11+1+3, 11+2+2 and 10+2+3 is observed. In the States where 14 years' duration of the first-degree course is obtaining the breakdown of the type 10+1+3, 11+3 is observed. Thus an ununiform pattern of education is obtaining in the States and the Union Territories of India. This situation calls for a uniform pattern of education throughout the country.

There are some questions deserving attention before implementation of the new scheme. These questions are:

- (a) Whether these two years of higher secondary/pre-degree courses are to be attached to the schools or to the colleges?
- (b) What would be the content of these two years' course?
- (c) How would this be different from ITIs and other technical certificate and diploma courses?

- (d) How is the scheme likely to be implemented?
- (e) How would resources for implementation of the scheme be made available?
- (f) How will manpower be deployed for the implementation of the scheme?
- (g) How is this change likely to fulfil the broad social and economic objectives of education?

As we will see later not much attention had been paid to these aspects before the State Governments were firmly persuaded to implement the new pattern.

As the two types of first-degree courses are obtaining in the country, it would have been worthwhile in the first instance to assess the knowledge gaps between the contents of the courses where 15 and 14 years of first-degree patterns are obtaining. No doubt this is a very difficult task but it is an essential one before any step is taken to implement the new scheme. Also it has to be seen how far the level of knowledge which is intended to be imparted under the new scheme would be different from the prevailing level. How is the new content of the knowledge likely to be divided in the 10+2+3 years' duration of education?

Another aspect linked with the issue is the preparation of text-books in languages of the respective States and the training of the teachers in the new courses. The preparation of text-books and the training of teachers would require advance planning. But instead of that, in the implementation of the new pattern in some of the States, all these steps have been ignored. Wherever some planning about the preparation of text-books and training of teachers was done, it was done without assessing the knowledge gaps, clearly dividing contents in 10+2+3 years' duration and without proper training of teachers. It was also done in a great hurry. This resulted in a sort of confusion in the minds of teachers as well as students.

It has been widely publicised that under the new pattern some technical/vocational courses will be introduced. The aim behind the introduction of such courses is that they will provide terminal points for many students who desire to take up jobs after 10+2 years of education. It is, however, not clarified how this will happen. How is the content of vocational training different from the vocational training given in the ITIs and in other institutions? How are resources and manpower likely to be mobilised for the introduction of each training in a large number of schools/colleges?

It may be pointed out here that even large percentage of vocational diploma and degree holders produced from our ITIs and other institutions are unemployed. Therefore, even after assuming that the facilities can be created for vocationalisation and practical training, it has to be seen whether vocational/practical training which is intended to be pro-

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vided has any bearing on the economy's requirement. This has to be again studied in the light of rates of growth in agricultural, industrial and service sectors in the economy. Therefore, the 2 stage, in becoming a terminal point would depend upon rates of growth in these sectors and the available of job opportunities in them. The introduction of +2 stage by itself would not in any way provide jobs to those who are seeking jobs after 10+2 years of education.

The scheme can be implemented in three ways. First, by attaching the +2 stage to the higher secondary schools; secondly, by attaching it to the college; and thirdly, partly to the colleges and partly to the schools.

In the first case, the implementation of the scheme would require transfer of one year's course to the schools from the colleges in the States where 15 years of first-degree course is obtaining. In the States where 14 years of first-degree course is obtaining, the implementation would require introduction of one more year to the higher secondary school courses. In the former case, it would imply that some of the teachers engaged in teaching pre-university/first-year of inter classes would require to be transferred to the schools. The number of such teachers is likely to be sizable.

The transfer of teachers to the schools may be resisted by the teachers on two grounds. First, on the ground of loss of their status of college teachers. Second, on the ground of reduction in pay scale of these teachers. Even if the latter aspect is taken due care of, some resistance will have to be faced from the teachers on account of the fall in their status.

Another aspect which has to be taken into account is the problem of fixing the criteria for transfer of college teachers to schools. Here it has to be seen whether the junior-most teachers should go to the schools or fairly experienced persons should be transferred to the schools. In the absence of any clear-cut guideline on this aspect, there are possibilities that attempt at adjustment might lead to confusion. It will also give scope for victimisation of some of the teachers who are not liked by the college management. It will also leave some of the facilities in the college unutilised. Besides, the reduction in students' strength will reduce the revenue of the colleges. That might increase the financial burden on the colleges. As a large number of colleges are already in financial crises, the increased burden might force some of them to close down.

In the latter situation, where 14 years' first-degree course is obtaining, the implementation would call for employment of more teachers in the schools.

If +2 stage is attached to the colleges, some of the teachers from schools would be transferred to the colleges. Here again the problem of who should be transferred to the colleges will arise. This method of implementation may, however, take care of the problem of status and pay scales of college teachers. But the problem of creating additional facilities for one more year's course in the college and at the same time leaving some of the facilities idle in the schools will remain to be tackled. Besides, it would also call for increased grants-in-aid to the colleges to meet increased expenditure on teachers' salary. If the

scheme is implemented in the third way, in which +2 stage is partly attached to colleges and partly to schools, it would create more complications than we visualise in the situation when +2 stage is either attached to colleges or to the schools.

In the States where 14 years' first-degree course is obtaining, the increase of one more year for obtaining the same degree might be resisted by the students and their parents. This is specifically because most of the parents send their wards for higher education with a view to getting early degree so that they may add to the earning capacity of the family. The delay of one more year coupled with some of the waiting period in getting a suitable job might cause some problems for the parents as well as for the students.

However, the purpose of this presentation is not to suggest that uniformity in the educational system should not be introduced. What is simply intended to suggest is the possible reaction of students and their parents, that have to be faced by the Govt when the new pattern is implemented in the States. It may, however, be mentioned that any temporary solution like two years of pass course would defeat the very purpose of the new scheme.

The introduction of the new pattern would necessarily mean the creation of an additional infrastructure if the +2 stage is attached to the colleges or to the schools. It might as well render surplus some part of the existing infrastructure in the schools/colleges. As stated above the introduction of vocational and technical training would also require some additional facilities to be created in the school/colleges. This would require advance planning as well as additional resources.

Since independence no radical change in the education system has occurred. There has been much talk of bringing about a change in the education system so as to fulfil the aspirations of the people after achieving independence and to meet the needs of economic and social development. But nothing concrete has been done in this direction. Our education system has more or less grown out of the pattern of the colonial education system, left behind by the British—of course, with some changes here and there. These changes have, however, re-emphasised the old economic and social structure. Evidences on this aspect are widely publicised and do not need to be recounted over here. What we need is the clear definition of the social, economic and political objectives of our education system, and also a well-designed educational planning to achieve these objectives. It may be mentioned that we have spent about Rs. 1,500 crores (2.53 per cent of the GNP) every year on education, but we do not have any planning worth its name. This is evident from the fact that (a) the wastage and stagnation in Indian education system are much higher; (b) very small proportion of rural population is literate; (c) higher education is still a dream for a large section of economically and socially backward classes of society; and (d) a large number of graduates are unemployed.

Unless the objectives are clearly stated and planning is done to achieve these objectives, the introduction of any pattern would prove to be a sort of window dressing.

(Courtesy: *Mainstream*)

An Instrument for Decision-making in Management

J. F. Pandya*

Libraries play a vital role, more so in educational institutions. No wonder they say a room without books is like a man without soul.

In management institutions libraries are really laboratories and tools for study, teaching and research. They help both the teacher and taught to keep themselves abreast of the advances in many disciplines.

The Indian Institute of Management, Ahmedabad set up in 1962 by the Government of India in collaboration with the industry and the Government of Gujarat, is proud of its well-stocked library. Named after the institute's founder, Dr. Vikram Sarabhai, the Vikram Sarabhai Library, one of the best management libraries in South East Asia, is well equipped to play its part in meeting the objectives of the institutes which are :

(a) To provide educational facilities for training young men and women for careers in management and related fields in any form of organization; (b) To contribute to the improvement of the decision-making, skills and administrative competence of practising managers; (c) To develop teachers and researchers in different fields relating to management; (d) To develop knowledge through original research, both applied and conceptual, relevant to management and its underlying disciplines, and to disseminate such knowledge through publications; (e) To assist organizations in solving their management problems by providing consulting services; (f) To collaborate with other institutions in India and abroad to further any or all of the above objectives and, if necessary, to assist in institution building.

The information storage and retrieval system in the library is designed to meet the academic and research needs of the Institute. The subject coverage is intensive in fields like economics and social analysis and environment, financial management, organisational behaviour, personnel and industrial relations; trade unions, manpower planning, production management, marketing, operations research, computers and information systems, family planning, rural development and agricultural management and public systems and agricultural management. The collection also

includes books on supportive disciplines like behavioural science, economics, sociology, social psychology, business and managerial history, political science and mathematics and statistics.

Over and above, the library has also started building the collection on various research activities and projects of the institute in the fields like population, public distribution systems, energy, housing, tribal development, transportation etc.

Library collection

Starting from a base collection of 7,000 books and 400 periodicals in 1963-64, Vikram Sarabhai Library's present collection of books and bound volumes of periodicals numbers about 85,000. It subscribes to about 900 current management periodicals published all over the world. The average number of books acquired in a year is more than 5,000.

To enable maximum utilization of the library resources and of the open stack system, VSL has grouped its books into five sequences, text-books, reference, general, government publication, and rare books.

Audio-visual aids like films on management subjects, micro-films and micro-fiche constitute the "Audio-visual Sequence". Micro-film and micro-fiche readers are available.

Collection of published company information is one of the library's main functions. The corporate library has 2,000 Indian and foreign companies reports. An alphabetical index of the company reports in stock with the library is provided in card form. A plan for preparing the "Activity Index" of the companies is under consideration. The collection provide further opportunities, for faculty, students and alumni to study company activities in many ways.

Reference Department

The various services which this unit is expected to perform can be described as the interpretation of the library's resources to readers seeking guidance in some study. This includes guidance in the selection of material, bibliographical searches and location of factual information.

Services

(a) Reference and Bibliography

To achieve this end, the department is active in preparing reading lists and subject bibliographies. It assists the readers at all levels in the use of reference sources, like indexes, bibliographies, catalogues, annuals, directories and statistical publication. It makes available to the students literature required for their various projects.

(b) Indexing

Thousands of articles are published in various journals and languages. It is very difficult to go through all the literature on the subject, but indexing is helpful to the teachers, students and executives who wish to read as much as possible on a particular subject. VSL indexes about 200 selected Indian

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periodicals and two dailies **The Economic Times** and **The Financial Express**. The index is being maintained on 5" x 3" cards and the file contains about 40,000 entries.

The scheme of assigning the subject heading is similar to the one adopted by the reputed American "Business Periodicals Index", published by H.W. Wilson Co., New York.

Initiation of new members

The library staff initiates new students and other members of the Institute in the use of the library as and when they join. They are taken round the library and the arrangements for collections, indexing systems, issuing facilities, membership formalities and other services provided by the library are explained. This is a continuous process.

Inter-Library loan

Co-operation with other libraries have continued through inter-library lending of books. VSL has contact with most of the libraries of the universities, institutions and corporations in the country. On an average about 300 books are lent out from this library and an equal number of books received from other libraries every year.

Publication and Exhibitions

The library compiles and issue the monthly "List of selected new books on management and related disciplines". This list represents only the selected titles embracing the functional and applied aspects of management.

VSL arranges twice a year an exhibition of balance sheets of leading foreign and Indian companies. The purpose of the exhibition is to complement the academic objectives of the Managerial Accounting module relating to preparation of annual corporate financial statements. This is done by making available specimens of actual financial statements drawn up by leading corporations.

To support the theme of the conferences or seminars hosted by the IIMA, the VSL arranges exhibitions of books, reports and journals on the subject and the material thus displayed are compiled in the form of bibliography.

Alumni

Alumni stationed in Ahmedabad and attending any of the Institute's programme, short term or long term, are entitled to become members of the library. Borrowing privileges are given to them after they deposit the required amount.

For Non-Members

Many institutions, universities and departments ask their teachers, students and technical personnel to work in the library for their dissertation, thesis or research projects

The demand for information on all aspects of business and management is steadily growing. The suc-

cess in tracing the information quickly depends partly on the library users' skill in tapping the various resources, available in the library i.e. books, periodicals, reference sources, statistics, information files and corporation collection, and partly on the efficiency of the library staff to give assistance. There is a growing need for students to be given more advice and guidance on how to use relevant information sources.

Physical Facilities

The VSL is housed in a four storeyed, fully air-conditioned building which is divided into two wings by a central staircase. One wing is the stack area and the other has reading halls. Twenty-six closed carrels and forty-four open carrels are provided in the stack area of the two floors. The carrels are designed for individual study, the closed carrels are for Fellow Programme students working on their thesis and assignments. Facilities for group studies exist on the third floor of the stack area where bound volume of periodicals and corporation reports are kept. The main reading hall accommodates about 100 readers.

VSL organization and staff

At present the library has the services of 10 professionals and 10 non-professionals (excluding stack assistants, library attendants etc).

The institute encourages the library staff members for their professional development. The library has a very good collection of books and periodicals on library science. The institute also encourages the members to contribute to professional literature by providing all possible assistance.

Acquisition and catalogue

Over and above the usual procedures for ordering of the material, the library gives priority for acquiring research-oriented material from the various institutes, association, societies and government publications and ministries' reports. The library is on many mailing lists thus procuring material from research and academic institutions, associations and societies, R & D departments of industries and government agencies.

The Dewey Decimal Classification scheme with certain pockets expanded and the Anglo-American cataloguing rules for the cataloguing are being followed for the organization of the library material. The library of congress subject headings scheme is being applied for assigning the subject headings to the library material.

Conclusion

With the keen interest shown by the Institute's authority and faculty and the team spirit of the library staff the VSL is bound to meet the national requirements for published material and information on management within a couple of years. The demand on VSL for information on aspects of business and management as well as the need for advice and guidance on how to use the library resources is increasing. □

Vice-Chancellors meet the Prime Minister and Agriculture Minister

Sardar S.S. Barnala, Union Minister for Agriculture and Irrigation inaugurated a two-day conference of Vice-Chancellors of agricultural universities in Delhi. He suggested that farm universities may develop a special strategy so as to tone up the production of grains under different conditions of irrigation. He wanted the universities to lay stress on the improvement of production of gram and peas in coming rabi season by training farmers and extension workers in scientific sowing and application of bacterial cultures. Since rabi sowing would start next month, little time was left for the launching of the campaign. After the sowing is over, the student and staff could help in the control of pest and

be made the instrument of generating more income and employment by suitable integration of production and post-harvest technologies.

Mr. Barnala favoured the creation of agro-industrial complexes in every district. These complexes should accord top priority to landless labour, some of whom may be withdrawn from routine farming operations. He also made a strong case for stepping up oil seed production. The recent study of the Indian Council of Medical Research has shown that the intake of oils and fats was just 10 gms per head against the required 30 gms.

Referring to the growth of agricultural universities, the Minister

admission of students from farm families so that they could go back to their farms and increase their production. Mr. Desai suggested that Government farms should be converted into demonstration farms to introduce new technology to farmers. He also wanted agricultural universities to change their teaching techniques. They should do more practical work so that they could practise what they had learnt. He pleaded for the institution of special prizes to small and marginal farmers to encourage them to increase productivity. At present most of the prizes went to big farmers.

Teachers meet in Gorakhpur

A joint convention of the teachers of state universities of Uttar Pradesh was held at Gorakhpur recently under the presidentship of Dr G.R. Sharma of Allahabad University. The Convention felt that the various new experiments conducted by the government in the universities during recent years have failed to bring out the desired results and have proved detrimental to the interest of higher education in the State. The Convention therefore recommended that there should be fresh thinking on all aspects of higher education. Healthy measures of reform, which will ensure full autonomy and academic freedom of the universities should be introduced by the government.

The Convention demanded full academic and administrative autonomy for the universities. It suggested that Allahabad, Lucknow and Gorakhpur Universities should be made purely unitary, teaching and residential universities and all the existing unitary residential character of Sampurnanand Sanskrit Vishwavidyalaya and Kashi Vidyapeeth should be retained. Separate Acts for different universities keeping in view their genius, needs and regional or other requirements, should be framed.

The Convention disapproved the idea of holding Vice-Chancellors Conference and urged the government to discontinue the

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advise farmers on different aspects of agricultural methods employed for the improvement of farm products.

Mr. Barnala said that India grew the largest number of pulse crops, yet their production had been sadly neglected with the result that the per capita availability of pulses had been steadily going down. Indian agriculture was now on the crossroads. All these years, increases in output were registered more due to bringing fresh hectares under the plough than to raise in productivity. There was a lack of integration in crop-livestock-fish production programmes all over the country. This needed a reorientation so that farm growth may

felt that it had been uneven. Some universities had developed well while others trailed behind. A review committee headed by Dr. M.S. Randhawa was already considering all these points. The report of the Committee would go a long way in planning of agricultural universities for the VI Plan period.

The Prime Minister, Shri Morarji Desai also addressed the Vice-Chancellors when they met him. He suggested that regional languages should be adopted as the medium of instruction in agricultural universities as teaching in the language of the people was essential for the development of agriculture. These universities should give preference for

practice of holding such conferences. It expressed its concern over the existence of a large number of temporary teachers in various departments of state universities and demanded that all existing temporary posts which have existed for a period of three years or more be made permanent. The Convention took note of the allegations and counter allegations of corruption, favouritism made at different levels on different occasions through various forums and with a view to restoring public confidence resolved that a Commission of High Court Judges be instituted to go into all such cases of corruption and misuse of power made against any person irrespective of the fact whether he is the highest authority or the meanest employee connected with the university administration. The Convention also demanded that the university teachers be given all such facilities as are available in the central universities, for example the triple benefit scheme, house rent allowance and free medical facilities etc. It demanded that payments should be made to teachers for examination work, including setting of question papers, evaluation of answer books, conduction of practical and viva-voce examinations, tabulation and collation and scrutiny work etc with effect from 1974.

The Convention also demanded that the system of private examinations be abolished from the residential universities in view of teaching as well as research done in these universities and suggested that the affiliating universities be given the responsibility of conducting the examinations of private students.

The question of the abolition of the present three grades in the universities was also considered and it was suggested that the system of one integrated pay scale be followed by the universities.

INSA pleads for effective planning

The Council of the Indian National Science Academy met in New Delhi on the 8th and 9th August. The members of the

Academy were very much concerned over the various statements made in the press at different conferences and other public platforms that the country has not benefitted sufficiently by the ushering in of science and technology since independence. It is to be said, on the contrary that the impact of science and technology on Indian industry and agriculture has been such as to put the country in a very special position among the developing nations of the world. Its approach to its problem through science tempered by its ancient wisdom of viewing everything in a humanitarian way has allowed us to develop our technology in such a way as to bring out the genius of its people and be an example to other countries.

It is true that in a situation of a runaway population, the benefits are not visible everywhere, but anyone who wishes to investigate for himself the advances made in agriculture, health, nuclear science, space, metallurgy will be dazzled by all that has been achieved in such a short time and much of it purely by Indian efforts. It is well recognised that it is by the application of modern medicine that the country has been able to increase life expectancy, decrease incidence of communicable diseases and to rid itself of epidemic diseases such as small-pox and plague.

It has become fashionable to accuse science and the work of scientists for various acts of omission and commission. The failure to have good water supplies in towns and villages, poor quality of roads, unhygienic hospitals, poorly constructed buildings, lack of nutritious food etc., are not due to science, but due to poor management and administration, indecision at political levels and the stronghold of superstitions on our simple folk.

The import of foreign technology begins to look attractive under these conditions, but the real strength of the country lies in its becoming self-reliant in as many aspects as possible. We are not merely a country, but a small continent and have some of the most capable people in the world

in our 600 millions. We will never be able to utilise their talents and give them confidence if we run after foreign inputs which for all the advantages they provide in the beginning, will have an adverse effect on our economy due to the high rate of obsolescence of imported technology. There is no substitute for self-reliance based on indigenous basis and applied research. This is the only way early obsolescence can be avoided. Situations may however exist, as with certain well established technologies, where it would admittedly be futile to expend large sums of money in repetitive research and development efforts rather than importing the know-how for appropriate development towards practical ends. On the other hand, we have the talent and resources for taking innovative leads on our own for absorbing imported technologies as well as for competing with contemporary technological advances elsewhere. These should be encouraged.

Lack of proper planning and adequate funding have brought our educational system to a position of stalemate wherein teachers and educators find themselves in the enviable position of having to train large number of students in our colleges and universities. This has led not only to unhealthy proliferation of higher education which has no relevance to the needs of the country but also to an increase in the number of educated unemployed. Vocational training at schools is just a paper plan and polytechnics as well as Industrial Training Institutes as planned today have a long way to go before they are useful to the needs of the area. No attempt has been made to improve the social status of a technical worker so that people who wish to become technicians are always made to feel inferior to an administrator. In recent times, there is a feeling that even scientists will be reduced to the position of secondary citizens in matters of decisions making compared to those in administration. We would like to point out that in the advanced countries, professors and other skilled professionals are

highly respected in the community similar to what used to be in ancient India. It is not fully recognized and we should like to emphasize that good science and technology at the frontiers are required for solving complex problems of rural development and for this purpose, proper interfaces have to be developed. It has often been stated that scientists must work in villages. Unless specially trained for this purpose, it would be a waste of their aptitude and training. Their views are rarely accepted at the village especially if they are outsiders.

We understand that science is being reorganised at all levels and the structure of scientific agencies is being altered. It is no doubt necessary that the various commissions and agencies created in the past require reorganisation from time to time. However, it would be in the interests of the country if premier scientific bodies like the Indian National Science Academy are asked to give their views. It is in the interest of science that important decisions on science are not taken by individuals without consultation of a cross-section of the scientific community. It is for this reason as one of the biggest democracies in the world, we must plan for a system in which the difficulties under which scientists work are brought to the attention of the authorities concerned in as many ways as possible. The INSA is a body recognised for this purpose and would be happy to make its resources available to the Government in all possible ways, whether it is in planning, reorganisation of scientific structures, availability of experts or the evaluation of the scientific achievements of the country.

Whatever approach we adopt to improve economic conditions, the development of science in all its aspects is inescapable in a large country like India. We spend comparatively so little in R and D as a percentage of our G.N.P. If this is increased even marginally, the inevitable progress of becoming a prosperous country through science and education will be greatly speeded up.

The Academy welcomes the

statement of the Prime Minister that every effort will be made to ensure that no one in this country remains unemployed within a period of ten years. This in our view can be achieved only through a scientific utilization of all our resources, material and human.

The Academy extended its fullest cooperation and support to the Government in their endeavours to eradicate poverty to improve rural economy as well as to evolve plans for development through science and technology.

Bihar libraries lagging behind

Prof. Ugra Mohan Thakur, Director of UNESCO Information Centre, Patna University has pleaded for immediate improvement of libraries in the universities. He has suggested that refresher courses and seminar be organised frequently to improve their conditions.

The libraries in Bihar Universities do not have enough facilities due to paucity of funds. The Kothari Commission on Education had recommended an expenditure of Rs. 25 per student on books and other reading materials every year but the universities in the State do not spend more than three rupees per student on this account. Though there are more than three lakh students and teachers in eight universities of the State, the annual grants to these Libraries do not exceed nine lakhs of rupees.

The Patna University Library which came into existence as early as 1917 caters to the need of 15,000 members of its academic community. The total number of books and periodicals is 2,15,000 and 500 respectively. The annual grant for this library for purchase of books and journals is Rs. 55,000 though annually about 1,00,000 books are issued to 83,470 readers.

The Bhagalpur University Library, which shifted to its new building in 1969, possesses nearly 55,000 books and 439 periodicals. The total enrolment of students is about 40,000. About 25,000

books are issued to 16,000 readers every year. The budget provision for purchase of books and periodicals is Rs. 50,000.

The Bihar University Library which was founded in 1952 caters to the requirements of 55,000 students. There are about 50,070 books and 87 periodicals in the library. It lends 32,000 books to 31,000 readers in a year. The annual grant to this library is about Rs. 34,000.

The Kameshwar Singh Darbhanga Sanskrit University has a central library which has a collection of manuscripts, books and records on diverse subjects. At present there are about 9,000 books, 5,000 manuscripts and 1,250 periodicals in the library. About 350 books are issued every year, while the total enrolment is 4,000.

The L.N. Mithila University Library was established in 1972. It has a collection of over a lakh of books and 400 periodicals. It received rich collections from the Mithila Raj. It also received a sum of Rs. 3 lakhs for the purchase of books and periodicals in order to meet the requirements of about 60,000 students.

The Magadh University Library caters to the needs of 51,000 students, has 66,605 books and 42 periodicals in its possession. About 5,083 books are issued to 8,325 readers every year. The total space available for reading is at present 439 sq. ft. The university proposes to have a bigger library soon. It receives a grant of Rs. 2,10,000.

The Ranchi University Library which was founded in 1963 serves the requirements of 50,000 students. It possesses 65,580 books and 3,590 journals. Approximately 1,000 sq. ft. of reading space is available in the library. About 83,000 books are issued and 51,500 readers visit the library every year. The library receives 1.44 lakhs for the purchase of books and journals every year.

The Rajendra Agriculture University has no central library of its own. All the five constituent colleges of the university have their separate libraries.

The university library is still under construction.

The progress of libraries in Bihar has been hampered mainly due to lack of sufficient staff and adequate grants. There are about 2,000 staff members serving in different kinds of academic libraries in the State. Most of the university libraries are trying to build up their collections with a handful of underpaid and under-equipped staff.

Changing pattern of education

The Punjab Government called a conference to discuss the educational system in the State with special reference to the proposed 10+2+3 pattern of education. The Conference was held at the Punjabi University Campus in Patiala and was attended by prominent educationists. The consensus of the Conference was that the education pattern in the State should be in line with that of the country and it should be suitably adapted keeping in view the local conditions and requirements.

Mr. Sukhjinder Singh, the Education Minister, who presided, in his address emphasised the need for reforming the existing system of education so as to make it more purposeful to the changing pattern of society.

Dr. Gopal Singh, Chairman, State School Education Board, said that during the last three decades the country has not moved purposefully either towards socialism or towards capitalism and this drift has created a lot of confusion. He said education should be a long term project to assist the changing socio-economic system of the country and should be in line with the national aspirations. It should be tuned fully with the political changes in the country. The need of the time was industrialisation and this aspect should not be ignored while formulating the educational policies.

Dr. D.V. Vij, Principal of the College of Education laid stress on the maximum utilisation of existing resources. He observed that in a number of schools equipment was lying unused. The ser-

vices of specialised teachers were not being utilised properly. He laid stress on strengthening of primary education and improving the conditions of the schools and teachers at this level.

Dr. Amrik Singh Cheema, Vice-Chancellor of Punjab Agricultural University, felt that there was urgent need of effecting reforms in the existing ten year school system so that ultimately vocational training could be adopted. He predicted that in times to come there will be a growth of industrial village-towns throughout the state. So he wanted that educationists should keep this aspect in view while formulating the future educational policy.

Mr. B.S. Bahl, Principal of D.A.V. College, Jullundur, referred to the huge national wastage in the present system of education. He suggested the formation of junior colleges on the pattern of community colleges. Rural colleges with the addition of some facilities could be easily converted into junior colleges without much difficulty. He pleaded for maintenance of colleges without much difficulty. He pleaded for maintenance of college standard along with their graded expansion.

Mrs. I.K. Sandhu, Vice-Chancellor of the Punjabi University was of the view that the present school syllabi and courses of reading were over stuffed and various steps would have to be taken to make reading more profitable.

The main focus of the Conference was on the changes in the education system, the need of making it conform to the needs

of the society and to the maximum utilisation of the existing resources.

The Education Minister in the closing address pleaded for the strengthening of the education system at the school level. This should be achieved as quickly as possible in the larger interest of the society.

Delhi concession for sportsmen

There is a proposal to relax percentage of marks for admission to various undergraduate and postgraduate courses in the University of Delhi for outstanding sportsmen and sportswomen. The proposed relaxation for admission to undergraduate courses will be applicable to those students who have either represented the country in any game during the last three years or have secured any of the first three places in any game in national school games and junior national level tournaments or have taken part in the national school games during the last three years.

For admission to postgraduate courses the relaxation will be applicable to those who have represented India in any games during the last three years or have secured one of the first three positions in national level tournaments during the last three years or have been either first, second or third in the inter-zone university tournament or have represented Delhi University in the inter-university tournaments during the last three years.

Subscription Rates

Period	Inland	Abroad	
		Surface	Air
	(Rs.)	(Rs.)	(Rs.)
1 year	16.00	80.00	140.00
2 years	30.00	150.00	260.00
3 years	44.00	220.00	360.00
5 years	72.00	350.00	550.00
Single copy	00.80 ps.	4.00	8.00

The Journal is mailed on 1st & 16th of every month.

India to launch satellite in 1980

India's own satellite is expected to be ready and put in position by 1980-81. It will replace the use by the country of the International Telecommunication Satellite (Intelsat) over the Indian Ocean which is to function by the end of next year.

The Indian Satellite will be positioned at 70° east longitude and will be used both for communication and television and allied purposes. The satellite is expected to bring about a communication revolution as the induction of satellites into national service would transform the communication services in a big way. Special efforts were being made to establish communication links with remote areas like Andamans and the North Eastern and Northern parts of the country with these satellites. Special earth stations will soon be set up for this purpose in Delhi, Madras the island communities and in the Northern and North Eastern areas.

Though the telecommunication equipments were being manufactured by the Indian Telephone Industries in the country yet the import of technology was still necessary particularly in the field of electronics and cross-bar telephonic system.

Madurai starts open university system

The Madurai University has introduced the open university system from the current academic year. Any resident of Tamilnadu or Pondicherry who is twentyfive years of age or above could now be eligible to undergo the Bachelor's degree course. No minimum educational qualifications has been prescribed for admission. The course would benefit particularly those persons who discontinued their education and are now desirous of taking up higher education.

UGC Review Committee reports to the Ministry of Education

(Continued from page 459)

basis preferably by an administrator with experience of education or an academician with administrative experience.

Arrangements should be made for in-service training of various categories of staff.

The UGC should evolve its own procedures suitable for the efficient functioning of an organisation dealing with academic policies and programmes. It should evolve a system of periodic review of its working and organisation at least once every ten years.

The name of the University Grants Commission may more appropriately be changed into University Education Commission. The Commission's prior approval to the establishment of new universities and colleges should be obligatory.

The Commission's functions should include activities relating to development of standards and coordination in respect of all universities and colleges in the country. It should be entrusted with the task of research, planning and evaluation of higher education. The Commission should particularly be authorised to evolve a system of accreditation of university departments and colleges. It should by law be given the power to recommend to government derecognition of a degree of a university on grounds of lack of standards in the same manner as the Indian Medical Council is empowered in respect of a medical college.

The annual report of the Commission should besides giving a true and full account of activities also present before Parliament problems and prospectives of higher education and the situation in regard to coordination and standards in universities and colleges. The annual reports should be circulated to all universities and state governments.

The Commission should report separately on (i) the maintenance activities in respect of central universities and their affiliated colleges and such other institutions as may be given maintenance grants and (ii) the development activities in respect of all universities.

The Committee has also suggested that a high level coordination body with heads of different organisations dealing with higher education in research like UGC, CST, CSTR, AEC, ICSSR, ICHR, ICAR, ICMR and AICTE as well as senior representatives of the Ministries of Education, Health and Agriculture and the Planning Commission as its members, may be established to deal with matters of policy regarding coordination of activities and sharing of resources between areas of teaching and research involving universities falling within the purview of the UGC, higher educational institutions outside the purview of the UGC and non-university research organisations. This policy-making body should have a small standing committee which should from time to time review the implementation of its decisions and take other follow-up action.

In each state there should be a coordinating body, headed by the chancellor, consisting of all vice-chancellors of universities, selected college principals, independent academicians and representatives of the state government as well of UGC to effect coordination among higher educational institutions at the state level within the overall national policy.

The Commission should be given the authority to have plans prepared and implemented for exchange of teachers pooling of library and laboratory facilities, and coordination of research in universities.

It should be provided through proper legislative action that no university or college will be established unless the UGC concurs and is satisfied that there is proper planning and adequate provision of resources for the purpose.

The UGC should lay down guidelines in respect of enrolment policy which should be followed by universities and colleges.

For the guidance of state governments and institutions concerned the Commission should evolve norms of work-load for university and college teachers which should be applicable at all levels. These norms should take into account the requirements of staff for class-room lectures, tutorials, internal assessment, conduct and guidance of research and other activities.

The UGC should, with the help of academicians, draw a framework of remedial courses for students from weaker sections of society to enable them to get admission to universities and colleges on a level of equality.

A national examination should be organised jointly by the UGC, UPSC and AIU for post-graduates in different subjects and candidates who are declared successful in this examination should be given weightage for selection to the posts of lecturers and for research fellowships.

The Commission should maintain panels of experts in different subjects to be able to advise universities and colleges. The chancellors of universities should select their nominees on the selection committees out of the panel of experts maintained by the UGC.

UGC should concern itself with the methods of appointment and tenure of professors of universities. It should maintain a panel of suitable persons for professorships in different subjects to be able to commend such names should a university want them.

The Commission should help the universities to organize initial training of teachers in universities and colleges. It should have a proper follow-up and evaluation of in-service training programmes which it is conducting.

In view of the adoption of Hindi and regional languages media of instruction by various higher educational institutions, a detailed plan of action for training teachers to teach through the new media as well as for preparation of books and teaching material should be drawn up and implemented expeditiously.

New colleges should be set up only after a joint survey by the affiliating university, the UGC and the state government concerned regarding their need, location, courses of study, staff, limits of intake and other relevant factors. An adequate minimum financial support must be available before a college is started.

The UGC should, with the help of academicians, undertake continuous assessment of the standards of colleges and provide necessary guidance and help to them. It should be empowered to close down a non-viable college which only duplicates facilities already available in the same area or to reorganize it as an institution for providing vocational courses to suit the needs of the region.

A reasonably uniform and sound system of grant-in-aid to affiliated colleges all over the country should be evolved from time to time by UGC which should be followed by the governments concerned so that colleges are run with adequate resources. The Commission should also lay down guidelines and procedures so that the managing committees function in the best interests of colleges.

The Commission should provide guidance to existing colleges so that within a specified time, with necessary help, they improve their functioning and conform to required academic and administrative standards. The procedures should contain a provision that a college will be liable to be derecognised if it does not show the required improvement.

The Commission should take initiative in selecting autonomous colleges and, with the cooperation of the state governments, help them to function as such.

Priority attention should be given by the UGC to restructuring courses, particularly in rural colleges, to make them relevant to rural

Study Group for Autonomy

Eleven-member working group under the Chairmanship of Mr. B.G. Verghese, former Editor of Hindustan Times, has been set up to report within three months on how all India Radio and Television could be made autonomous institutions. The other members of the group are: Mr. V.G. Rajadhyaksha, Dr Malcolm Adishiah, Mr Chanchal Sarkar, Mr. P.L. Deshpande, Prof. Uma Shankar Joshi, Mr. A.G. Noorani, Professor J.D. Sethi, Dr. P.J. Fernandes, Mr C.R. Subramaniam and Dr Iswar Dass. The terms of reference of this group are:

(a) To examine the functional, financial and legal aspects of the proposal to give full autonomy to Akashvani and Doordarshan, consistent with accountability to Parliament keeping in mind the different forms of autonomous organizations existing in other democratic countries in the matter of broadcasting;

(b) To suggest the forms and the structure of the autonomous organization(s) and their relationship with Government;

(c) To consider and make recommendations in respect of the absorption, fitment and replacement of the personnel of the two media in the event of grant of autonomous status;

(d) Formulate plan of action for expeditious implementation of the proposal, if the recommendations of the Working Group are accepted by Government; and

(e) To examine any other allied matters necessary to enable Working Group to make the recommendations on the future setup of the media.

M.Sc. in Wood Science

The Academic Council of Calicut University has decided to start a two years MSc course in Wood Science with special reference to the wood industry flourishing in the northern parts of Kerala. This course will be the first of its kind and will cater to the needs of not only Kerala but other states,

Courses in Computer Technology

(From our special correspondent)

A computer has been installed at the Bombay University's Victoria Jubilee Technical Institute at Matunga. This computer centre provides remote computing facility also.

This has been made possible through a connection by a telephone link between the computer installed at the institute, TDC-316, and a very sophisticated computer, DEC-1077, at the Tata Institute of Fundamental Research. The advantage of this link is that technologists at Matunga need not travel 15 kms to Colaba where the Tata Institute is situated for better computing facilities.

The link has been established by the national centre for software development and computing techniques. According to the Director of the national centre, Prof. R. Narasimhan, there will be a network of computing facilities in Bombay. A second link between the national centre at the Tata Institute and the Indian Institute of Technology, Powai, is on the anvil. Later there will be other links through the use of VHF and microwaves.

It is envisaged that every university in the country will acquire a computer in the next five years and there can be an inter-city computer-to-computer linkage via a communication satellite. The university network will enhance the standard of Indian technologists and enable various scientific projects.

A computer network spanning cities will cost only a fraction of the cost of a modern aircraft.

The computer center at the Victoria Jubilee Technical Institute will try innovations in teaching programmes and examination system. The computer is proposed to be used to evaluate the students weekly.

Bombay University is planning a B.E. course in computer technology. The university has already invited applications from qualified candidates for admission to its new evening course in "computer science and application."

needs and provide guidance and help to universities to evolve new courses for the special needs of different regions.

Faculty improvement programmes as well as programmes for improvement of teaching in colleges must be carefully planned with the participation of college teachers and a system of regular follow-up and feedback evolved.

The Commission should take an over-all view of the financial position of universities and build up sound statistical information regarding different sources of income and different items of expenditure of universities and colleges. Such information together with data about per student cost in different institutions in terms of courses of study should be important considerations in the matter of allocation of grants.

Maintenance grants to central universities and their affiliated colleges should be separately budgeted, separately operated upon and dealt with in a separate report on maintenance activities as distinct from development activities.

The UGC Act needs to be suitably amended to empower the Commission to advance loans for construction of such buildings by higher educational institutions as would give them some returns, e.g., hostels and residences. The Commission needs to be provided revolving funds, for starting a loan scheme of this type. The loans should preferably be interest free and recoverable in easy instalments.

Centres of excellence like the centres of advanced study, which are intended to serve as pace-setters, need to be maintained by the UGC on a regular basis.

The Commission should also consider giving 100 per cent assistance for improvement programmes for post-graduate and research studies.

The UGC should act as an advisory agency for procurement of sophisticated equipment for higher educational institutions, thus saving time of individual institutions and also ensuring uniformity in quality.

A suitable organisation should be set up as a limb of the UGC, with adequate freedom in functioning, and it should continually be engaged in studies and research on various aspects of higher education. The science research council or other units already set up or proposed to be set up by the Commission should be merged with it.

The UGC, through this organisation, should conduct studies on various aspects of higher education like higher education costs and how to reduce them rural higher education and how to make it relevant to socio-economic needs of the vast rural areas, enrolment and admission policy in higher education, courses of study and examination reform, innovation in teaching methods, educational material and technology, development of languages and production of books. It should perform clearing-house functions on behalf of the UGC. It should have a sound statistical unit as well as units concerned with higher educational planning and evaluation of higher educational institutions in general and monitoring of UGC's improvement programmes in particular.

Research departments of universities as well as individual academicians should be involved in conducting research projects. Research activity should be linked with training programmes for higher educational planners and administrators.

Higher education planning should be the responsibility of the University Grants Commission which should work in close collaboration with the Planning Commission and with research bodies and other agencies dealing with specialised sectors of education not falling within the purview of the Commission. In order to have closer connection with the Planning Commission, Secretary, Planning Com-

mission, should be an ex-officio member of the UGC. Similarly, the UGC and the University system should have closer links with the NCST and there should be larger representation of academicians on the latter body.

Educational planning in its very nature has to cover a generation and objectives as well as strategies have to be evolved in perspective. The UGC should prepare long term perspective plans for higher education and develop models suited to national needs. The plans for different five year periods should be drawn in the context of the perspective plan. The task of preparing plan proposals for the Commission's consideration should be entrusted to the proposed organisation for research, planning and evaluation.

The UGC in close cooperation with the Association of Indian Universities and other academic as well as professional bodies should undertake accreditation and grading of university departments and colleges and evolve a proper system of accreditation. The Commission be given the power to recommend to government derecognition of a degree of a university on grounds of lack of standards, as the Indian Medical Council is empowered in respect of medical colleges.

There should be a system of evaluation of Ph.D. theses, of examinations, of class teaching in higher educational institutions through teams of academicians.

A system should also be evolved for assessment by the universities and colleges of the performance of teachers on an annual basis. This annual assessment should be taken into account in making periodic evaluation of teachers for suitable reward to outstanding persons. There should also be a system of disincentives against poor performance.

The working of the visiting committees needs to be improved and a larger number of academicians of attainment and integrity involved in the task of assessment and evaluation of institutions.

All the programmes aimed at improvement of teaching and the faculty in university departments and colleges should be monitored regularly.

Bombay Seminar on Legal Education

The all-India seminar of the Bar Council of India was held recently at Bombay to consider how far the curriculum of the law colleges should be modified to give practical content to it so that the new entrant to the profession has a working knowledge of the tools of his profession.

Mr. Shashi Bhushan, Union Minister for Law, Judiciary and Company Affairs inaugurated the three day seminar. He felt that a greater emphasis in the curriculum should be laid to improve the professional skill. At the same time the student should be made aware of his obligations to the society. He emphasised on the revision of the system of legal education to ensure that the young entrant who becomes qualified as an advocate not merely knows a minimum of law but also has had instilled in him the rich idea as to the nature and quality of profession to which he is to be-

long. Mr. Bhushan said that the lawyers should continuously educate themselves so that they could discharge their duties efficiently. Law was a jealous mistress and demanded constant attention if the practitioner was not to be swamped under the increased deluge of statute law and case law. He suggested that the Bar Council or other professional bodies, either independently or in association with leading publishers could assist in instilling in the busy and not so busy practitioners an awareness of the changes in the law which required their immediate attention since text-books would not be helpful in this respect.

He further said that the Advocates Act, 1961, had specifically provided for the Bar Council of India playing a role in promoting legal education and laying down standards of such education in consultation with the universities concerned and the State Bar

Councils. The Law Commission had expressed itself against admitting candidates to the legal profession after the intermediate examination and had favoured a general liberal education as exemplified by graduation being an essential pre-requisite to the study of law. He wanted that the young entrants for the profession should undergo internship as in the profession of medicine and accountancy.

Mr. M. C. Chagla, former Union Minister and an eminent jurist, expressed the view that admission of students to the legal studies should be on a selective basis. He said that the success of the new pattern of education depended on the availability of trained teachers and also the syllabus that would be chalked out for it. English had played an important role in the freedom movement and in maintaining unity. Today it had become an international language and it no more remained the language of the British, the Americans or anyone in particular. It would be very difficult task to translate all statutes and laws into Hindi and it would only open a Pandora's Box. He pleaded for its retention as the medium of instruction.

Prof. T.K. Tope, Vice-Chancellor of Bombay University recalled that a committee under the chairmanship of Mr. Chagla, who was then the Chief Justice of Bombay High Court, had suggested that a degree was not essential for admission to study of law. A similar recommendation had also been made earlier when a pass in intermediate examination was considered sufficient for enrolment to a law studies.

Professor Satish Chandra, Chairman of the University Grants Commission stated that as an experimental measure it had been decided to accept a pass in intermediate stage as sufficient for admission to study of law.

The Seminar also discussed the effect of new pattern of education on legal education particularly with regard to entrance qualifications, duration and curriculum and the problems of continuing legal education.

Adiseshiah pleads for employable graduates

Dr Malcolm S. Adiseshiah, Vice-Chancellor of Madras University, inaugurated the training project for self employment among graduates in Madras. The programme was organised by the State Small Industries Service Institute and the University Students Information Bureau jointly. The Vice-Chancellor said that the aim of all university reforms should be to bring out employable graduates. According to the figures provided by the employment exchange, there were 15 lacs unemployed under-graduates, graduates and post-graduates in the country as on December 31, 1976 and the figure for Tamilnadu was more than 4 lacs. He said that one of the contributory factors to the student unrest was unemployment among the educated. The incidence of student unrest was negligible in courses where the students were sure of employment. The Union and State Governments were now paying special attention to the development of industries in the small scale sector. University was also keenly alive to the problems. The syllabus of various courses were constantly under review in the context of this situation. The University of Madras has organised numerous self employment programmes for the benefit of its students from time to time to help the students.

Study leave rules liberalised

The University Grants Commission has further liberalised the study leave rules for university and college teachers in Delhi. It has now been decided that these teachers will receive all the benefits due to them in addition to salary they draw. Rules regarding study leave have been brought at par with those for teacher fellowships. In the past, the fellowships were preferred by teachers in comparison to study leave.

INDIAN SCHOOL OF MINES DHANBAD-826004

Advt. No : 420031/77

Dated August 5, 1977

Indian School of Mines, which is deemed to be a University under the UGC Act, wishes to recruit a Registrar and a Deputy Registrar (Accounts) as below :

REGISTRAR

Pay Scale : Rs. 1500-2000, plus allowances as admissible to Government of India employees. Total emoluments currently payable at the minimum of the scale work out to Rs. 1803 only.

Job Description : The Registrar heads the administrative offices of the School and is responsible to the Director for proper functioning thereof and for :

- (i) arranging meetings of all School authorities and keeping minutes thereof;
- (ii) holding custody of all funds and properties of the school and to manage the same ;
- (iii) maintaining the School Accounts and preparing Annual Estimates and Statements of Accounts.

The Registrar is also the Secretary of the General Council, the Executive Board and the Finance Committee of the School.

Qualifications

1. Master's Degree in Science/Arts/Commerce/Administration or a Degree in Engineering/Technology, with not less than 60% marks. (Essential but relaxable in case of candidate otherwise considered specially suitable.)
2. About ten years administrative experience in positions of responsibility in an academic institution or university or research institute, or a Government Department/autonomous organisation dealing with academic matters (including about three years experience as Registrar of a degree level College or Deputy Registrar of a university level institution or equivalent position). (Essential)
3. Familiarity with academic (including examination) matters and financial matters (such as budgeting, accounts, etc.). (Essential)
4. Knowledge of Government rules and regulations, including those relating to accounts. (Desirable)
5. Experience of organising meetings and handling agenda and minutes. (Desirable)
6. Capacity to develop corporate life within an educational institution.

Those who have applied in response to the earlier advertisement of 19th March, 1977 need not apply again.

DEPUTY REGISTRAR (ACCOUNTS)

Pay Scale : Rs. 1100-1600, plus allowances as admissible to Government of India employees. Total emoluments currently payable at the minimum of the scale work out to Rs. 1,403 only.

Job Description : Responsibility for (i) internal audit of all receipts and payments, (ii) ensuring proper maintenance of accounts and records, and (iii) assisting Director/Registrar in managing the financial affairs of the School, including preparation of budget estimates and preparation of Statement of Accounts, etc.

Qualifications

1. Pass in Final Examination of Institute of Chartered Accountants of the Institute of Cost and Works Accountants. (Essential but relaxable in case of candidates otherwise considered specially suitable and proficient in double-entry system of accounts, to (a) a good Master's Degree in Commerce, or (b) a good degree with pass in Subordinate Accounts Service Examination of the Government.)

2. Experience for about ten years (relaxable to six years in the case of a Chartered or Costs and Works Accountant) in the maintenance and control of accounts in a large educational/research institution (or industrial undertaking or Govt or Semi-Govt Organisation) of which three years should have been in a position of responsibility. (Essential).
3. Experience in handling agenda, minutes and procedure of meetings. (Desirable).
4. Experience of administration in a residential institute (Desirable)

GENERAL

1. AGE normally not more than 45 years for Registrar and 40 years for Deputy Registrar (Accounts), relaxable in case of persons otherwise considered specially suitable. Upper age limit also relaxable by five years in respect of (i) candidates belonging to Scheduled Castes/Tribes, (ii) displaced goldsmith, and (iii) displaced persons from Bangladesh (the erstwhile East Pakistan) who had migrated on or before 1.1.1964.

2. APPLICATION in the prescribed form (obtainable from the Registrar, Indian School of Mines, Dhanbad-826004 on receipt of a self-addressed envelope of the size 30 cms × 12 cms affixed with postage stamps of the value of Rs. 2.65) should reach the Registrar on or before 12th September, 1977.

3. Applications should be accompanied by a Money Order receipt for a sum of Rs. 8/- (Rs. 2/- for Scheduled Caste/Tribes candidates) in token of remittance of APPLICATION FEE to the Registrar, Indian School of Mines, Dhanbad-826004.

4. Those IN SERVICE should apply through their employer. If the application through proper channel is likely to be delayed, an advance copy may be submitted but in such a case the original application must also reach the Registrar within 10 days of the aforesaid date.

5. The School reserves the right to consider cases of CONTACT CANDIDATES whose names have been suggested by Universities or other authorities, etc., even though they may not have formally applied for the post.

6. Candidates called for interview will be paid 1st class railway fare for to-and-fro-journey by the shortest route, or the actual expenses incurred, whichever is less.

CANVASSING IN ANY FORM WILL BE CONSIDERED AS DISQUALIFICATION.

S. K. BORDIA
REGISTRAR

In Brief

Mr M. G. Ramachandran, the Chief Minister of Tamilnadu has announced recently that parent-student-committees involving officials would be set up in different educational centres throughout Tamilnadu. These committees will look into the grievances of students and help in maintaining peaceful atmosphere in the educational campuses.

* * *

The University Grants Commission would be assisting Calcutta University to organise a post M.Sc course on the History of Science & Technology. The University has set up a special committee to prepare the model

syllabi for this course which will be first of its kind in the country.

* * *

The Maharashtra Government has fixed a quota of each university in the State for the additional seats in the first year of medical college. Out of a total 700 additional seats sanctioned by the Centre, 315 will be allotted to Bombay University, 130 to Poona University, 85 to Shivaji University and 70 to Marathwada University. The Minister of State for Health, Mr Sashi Kumar Shinde, made this announcement in Bombay. The students had been agitating for quite some time for the increase of seats in the medical faculty.

Assam Committee on Education

The Government of Assam has appointed an expert committee on higher education to study the problems of education at the district level. The Committee is expected to submit its report by October next. In the first phase of its spot study tour, the Committee visited the districts of Goalpara, Dhubri, Kokrajhar, Barpeta and Nalbari. The members met the principals of the colleges and sponsoring authorities of new colleges and higher secondary schools and discussed with them their problems of academic development and studied the feasibility of different schemes of expansion proposed by these colleges and secondary schools.

Personal

1. Dr. A. Ramachandran, Secretary, Department of Science & Technology would also work as Director-General of the Council of Scientific & Industrial Research.

2. Dr. M.S. Swaminathan, Director General of Indian Council of Agricultural Research has been elected Vice-President of XV International Conference of Genetics to be held in Moscow next year.

3. Dr. Jagdish Chandra Dikshit, Vice-Chancellor, Ravi Shankar University, Raipur has resigned.

4. Dr. H. Narasimhaiah, Vice-Chancellor of Bangalore University, has resigned.

5. Professor K.S. Bhargava, Head of the Department of Botany has been appointed Pro-Vice-Chancellor of Gorakhpur University.

6. Prof. G. Ram Reddy has taken over as Vice-Chancellor of Osmania University.

7. Dr. J.D. Singh of the Linguistic Department of Kurukshetra University has been appointed Pro-Vice-Chancellor of Dayanand University, Rohtak.

8. Professor B.D. Sharma, Registrar of Kurukshetra University has been appointed Pro-Vice-Chancellor of the University.

A Hundred Flowers : A study conducted by Registrars & Administrative Officers

M. K. Subramaniam*

The story of the Hundred Flowers nurtured in the Bella Vista garden at Hyderabad is the story of a ceaseless activity of a restless group of educational administrators who came together voluntarily to raise case-nurseries all over India that will feed the Bella Vista garden, the Headquarters of the Seminar of Registrars and Administrative Officers of All-India institutions in the fields of Science, Technology and Management. The five IITs, the three IIMs, the IISc Bangalore, TIFR, Bombay, Tata Institute of Social Sciences, Bombay, Institute for Social and Economic Change, Bangalore, the Indian School of Mines, Dhanbad and the ASCI, Hyderabad form the Seminar institutions.

Starting from humble beginnings at the Indian Institute of Science (IISc) Bangalore in 1968, the Seminar built up step by step a volume of shared experiences of their problems and activities in the first two-three years. The Seminar members were fully aware of the fact that "the type of administration required for the growth of Science and Technology was quite different from the type of administration required for the operation of industrial enterprises. Both of these were again quite different from the administration required for such matters as the preservation of law and order, administration of justice, finance and so on".

It was this deep awareness that saw the genesis of the Seminar and its activities. The seeds were sown and the seedlings germinated into a blooming plant growing with vigour. As the Seminar plant grew in strength, it branched into four major activities:

Annual Seminar Meetings for Registrars and Administrative officers—six held so far in various

Seminar institutions.

Administrative Development Programmes (ADP) for Deputy/Assistant Registrars and equivalent level officers—three organised so far at Bella Vista.

Project Studies on problems of critical importance to the Seminar institutions—two completed and one in progress.

Case Building Activity—A Hundred Flowers have bloomed. Besides six annual seminars and three ADPs, the Seminar conducted successfully :

One Case Workshop for Registrars, Administrative Officers, Deputy/Assistant Registrars and Principals of Colleges of A.P. State organised at Bella Vista, Hyderabad.

Four Desk Level Programmes for Junior Administrative staff in the various seminar institutions.

Simultaneously with the ADPs and the Case Workshop, concerted efforts were made to develop case studies which would highlight the different kinds of administrative problems so typically characteristic of the higher education institutions.

Future Programmes

The Seminar has so far been successful in gathering more than hundred Case-flowers which would form the material for the following Case Books to be published shortly by the Seminar:

Case Book on Higher Education Administration & Case Book on Collegiate Administration

These two Case Books are pioneering ventures of our Seminar and will be the first book of their kind to appear on the Indian scene.

A typical administrator deals with challenges and dilemmas in his daily activities that are far more complex and different than what would seem obvious. By reflecting on those challenges and

dilemmas faced by the Registrars, Deputy/Assistant Registrars, Principals of Colleges and other educational administrators in various institutions of higher education in India, in the lively cases included in these two Case Books, the Seminar has attempted to impart a feeling of the real world of work with all its enchantment, complexities, conflict, confusion, tension and excitement. The incidents and problems illustrated in these cases are based on actual incidents. We have very much to learn from the "hard-core" of experience of these educational administrators playing important roles in the turbulent atmosphere of educational institutions. The cases also serve to illustrate the management concepts and techniques which are applicable to the educational sector.

The Seminar hopes to conduct the following programmes in future :

1. Administrative Development Programmes
2. Case Workshops
3. Seminar for Secretaries/PAs and for Junior Administrative staff

The membership of the Seminar is entirely voluntary depending upon the interest and enthusiasm of the Registrars and Administrative Officers of the organisations, who are desirous of enriching their knowledge by sharing their experience with others.

Dear Subscriber

From January 1, 1977 the journal is posted on 1st and 16th of every month. If you do not have your copy for any issue by the mailing date of the next issue please write to us for replacement. Requests received later than that will not be entertained. Available back issues can be had as per prescribed rates.

*Programme Coordinator, ASCI, Hyderabad.

Conferences, Seminars and Workshops

September-November, 1977

Date	Title	Venue	Sponsoring Body
29 Aug— 3 Sept	Seminar on leadership and organisation development	Hyderabad	Administrative Staff College
29 Aug— 9 Sept	Third training programme on financial management for finance officers of universities	Delhi	National Staff College for Ednl Planners & Administrators
1 Sept—10 Sept	Management of research systems	Hyderabad	Administrative Staff College
2 September	Productivity measurement in Non-Ferrous metals	Delhi	Inst of Economic Growth
3 Sept— 5 Sept	Contemporary issues in elementary education	Tirupati	Sri Venkateswara University
5 Sept— 9 Sept	Human resources utilisation	Calcutta	Calcutta Productivity Council
5 Sept— 9 Sept	Project Management	Chandigarh	Nat Productivity Council
5 Sept—10 Sept	Metal mining systems	Dhanbad	Indian School of Mines
5 Sept—24 Sept	Programme in materials management	Poona	Central Inst of Road Transport
5 Sept—26 Sept	Workshop-cum-seminar on lexicography 1977	Trivandrum	Malayalam Lexicon, Kerala University
9 September	Economic appraisal of bio-gas units	Delhi	Inst of Economic Growth
12 Sept— 15 Sept	Handling, storing and utilisation of coal in cement plants	New Delhi	Cement Res Inst of India
12 Sept—24 Sept	Surface mining	Dhanbad	Indian School of Mines
12 Sept—24 Sept	Training course for state educational planning officers	Delhi	Nat Staff College for Ednl Planners & Administrators
14 Sept—16 Sept	International Symposium on Nuclear Physics	Calcutta	Variable Energy Cyclotron Laboratory
15 September	Engineers day	New Delhi	Inst of Engineers (India)
16 Sept—17 Sept	Hospital management	Calcutta	Nat Productivity Council
16 Sept—19 Sept	Seminar on Design and Standardisation of Electrical Machinery and Equipment	Hyderabad	Inst of Engineers (India)
18 Sept—19 Sept	Seminar on the problem of white collar crime in India	Amritsar	Guru Nanak Dev University
19 Sept—23 Sept	Advanced materials management	Delhi	Nat Productivity Council
19 Sept—28 Sept	Employment and Manpower planning at National & state levels	Delhi	Inst of Applied Manpower Research
26 Sept—29 Sept	Workshop on Law of the sea	Mysore	University of Mysore
26 Sept—30 Sept	Personnel management in an interdisciplinary approach	Bangalore	Nat Productivity Council
26 Sept—30 Sept	Seminar in magnetohydrodynamics and plasma dynamics	Chandigarh	Dept of Maths, Panjab University
26 Sept—30 Sept	Quality concrete: production and control	New Delhi	Cement Res Inst of India
26 Sept—1 Oct	Metal mining machinery	Dhanbad	Indian School of Mines
30 September	Pattern of population growth: a district-wide analysis 1901-71	Delhi	Inst of Economic Growth
September '77	Seminar on integrated rural development	Waltair	Dept of Cooperation & Applied Economics, Andhra University
September '77	Seminar on Television Engineering in India	Delhi	Inst of Engineers (India)
IIInd half September	Summer Institute in theory and practice of public administration	Udaipur	Dept of Political Science, University of Udaipur
Sept/October '77	Summer Institute in contemporary trends in geography	Shillong	Dept of Geography, NE Hill University
1 Oct—10 Oct	Symposium on literature and society 1945-1975	Jodhpur	University of Jodhpur
3 Oct— 6 Oct	Mineralogical control in cement making	New Delhi	Cement Res Inst of India
3 Oct— 7 Oct	Seminar on librarianship and information science	Delhi	University of Delhi
3 Oct—15 Oct	Applied geochemistry and geochemical exploration	Dhanbad	Indian School of Mines
3 Oct—15 Oct	Industrial engineering	Poona	Central Inst of Road Transport
3 Oct—15 Oct	Workshop on the phenomenology of particle interactions	Jammu	PG Dept of Physics, University of Jammu
5 Oct—10 Oct	XXXII International Homoeopathic Medical Congress	New Delhi	Institution of Electronics and Telecommunication Engineers
8 Oct— 9 Oct	IETE Symposium on Electronic devices	Calcutta	Andhra Loyola College
8 Oct—15 Oct	Restructuring of practicals relevant to theory (in Chemistry)	Vijaywada	
10 Oct—12 Oct	Seminar on Organometallic Chemistry	Lucknow	Chemistry Dept, Lucknow University
10 Oct—14 Oct	Seminar on National Plan for the education & training of library and information science personnel	Lucknow	University of Lucknow
10 Oct—15 Oct	Corporate strategies and long-range planning	Chail (Himachal Pradesh)	Nat Productivity Council
10 Oct—30 Oct	Workshop on the technique of editing old manuscripts	Udaipur	Dept of Hindi, University of Udaipur
17 Oct—21 Oct	Regional Asian Conference on the Family as a unit of welfare in National Planning	Delhi	1. I.C.S.S.R. 2. Int. Union of Family Organisations 3. Family Planning Foundation in India

Date	Title	Venue	Sponsoring Body
18 Oct—20 Oct	Management of rural distribution	Bombay	All India Management Association
23 Oct—29 Oct	International Paediatrics Conference	Delhi	All India Institute of Medical Sciences
24 Oct—26 Oct	Materials Science Symposium 1977 on Structure property correlation & instrumental technique in materials research	Rourkela	Regional Engineering College & Dept of Atomic Energy
24 Oct—28 Oct	Design and construction of tall industrial structures	New Delhi	Cement Research Inst of India
24 Oct—29 Oct	Human resources development	Lucknow	National Productivity Council
24 Oct—29 Oct	Marketing of agricultural inputs	Hissar	National Productivity Council
24 Oct—29 Oct	Personnel Management for mining executive	Dhanbad	Indian School of Mines
24 Oct—29 Oct	Public Relations	Poona	Central Inst of Road Transport
24 Oct— 2 Nov	Manpower planning and development at the Enterprise level	Lucknow	Inst of Applied Manpower Research
28 Oct—29 Oct	All India Symposium on natural resources and their utilisation	Bhopal	School of Biological Sciences, Bhopal University
29 Oct—31 Oct	Seminar on Urban History	Amritsar	Guru Nanak Dev University
31 Oct— 4 Nov	Application of calorimetric methods for rapid chemical analysis and quality control in cement plants	New Delhi	Cement Res Inst of India
October '77	Ayurvedic Research Seminar on Respiratory Diseases	Jamnagar	Gujarat Ayurved University
October '77	Seminar on Hindi poetry of post-independence period	Bombay	University of Bombay
October/Nov '77	Refresher course in research methodology	Rajkot	Saurashtra University
October/Nov '77	Seminar on reforms in the Indian Judicial system	Udaipur	College of Law, Udaipur Univ
1 Nov—30 Nov	XXI Hospital Administration Course	New Delhi	Nat Inst of Health Administration and Education
2 Nov— 4 Nov	Management of corporate insurance	Calcutta	All India Management Association
2 Nov— 4 Nov	Symposium on comparative animal physiology	Dharwar	Karnatak University
2 Nov— 6 Nov	IASLIC Conference	Dharwar	Karnatak University & IASLIC
7 Nov—12 Nov	Industrial electronics	Baroda	Nat Productivity Council
10 Nov—12 Nov	Fourth National Heat and Mass Transfer Conference	Roorkee	Dept of Mechanical & Industrial Engineering, Univ of Roorkee
10 Nov—13 Nov	Ecology and conservation of birds and mammals in India	Bangalore	Indian Institute of Science
12 November	Instrumentation and measurement including industrial electronics	Madras	Institute of Electronics and Telecommunication Engineers
14 Nov—17 Nov	Management of concrete construction	New Delhi	Cement Res Inst of India
14 Nov—19 Nov	International Solar Energy Congress	New Delhi	
21 Nov—22 Nov	2nd National Conference on Portable Power Sources	Bombay	Society for the Advancement of Electrochemical Science & Technology
21 Nov— 3 Dec	Linear programming and operations research	Dhanbad	Indian School of Mines
21 Nov—10 Dec	Management Information systems	Poona	Central Institute of Road Transport
22 Nov—24 Nov	First All India Symposium on Metabolism and disposition of Xenobiotics	Aurangabad	Marathwada University
22 Nov—26 Nov	Management of Growth of Tourism in India	Agra	All India Management Association
November '77	Orientation of secondary teacher educators in Microteaching	New Delhi	N.C.E.R.T.

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Agriculture

Marketing of agricultural inputs

Biological Sciences

Ecology and conservation of birds and mammals in India

First All India Symposium on Metabolism & Disposition of Xenobiotics

Symposium on Comparative Animal Physiology

Building and Building materials

Design and construction of tall industrial structures

Management of concrete construction

Mineralogical control in cement making

Quality concrete: production and control

Chemistry

Application on colorimetric methods for rapid chemical analysis and quality control in cement plants

Seminar on Organometallic Chemistry

Criminology

Seminar on the problem of white collar crime in India

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10 Nov—13 Nov.

22 Nov—24 Nov.

2 Nov—4 Nov.

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A list of select articles culled from Periodicals received in AIU Library during August, 1977

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- Gray, John and Satterly, David. "Chapter of errors: Teaching styles and pupil progress in retrospect". *Educational Research* 19(1); Nov 76: 45-56.
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- Derrick, T. "Criticism of inferential statistics". *Educational Research* 19(1); Nov 76: 35-40.

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- Gallagher, James. "Medical education—or mis-education?". *New Universities Quarterly* 31(2); Spring 77: 220-30.
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- Ardhanareeswaran, B. "Educational perspectives". *Bulletin Madras Development Seminar Series* 7(5 & 6); May-June 77: 323-49.
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A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Shyam Behari Singh. A study of personality of the parents of problem children. Kanpur University.

Sociology

1. Nandu Ram. Social mobility and status identification among the scheduled castes : A study of the scheduled caste government employees in Kanpur City. I.I.T., Kanpur.
2. Shah, Sulochana M. Social and political progress of women in India, 1828-1972. S.N.D.T. Women's University, Bombay.

Political Science

1. Dalui, Kartikchandra. Social mobility in Bengal. University of Calcutta.
2. Pandey, Sachchidanand. Indo-Bhutanese relations, 1947-71. Bihar University.
3. Shrivastava, Narendra Kumar. Nehru ke netritv mein smajwad ka vikas. Jiwaji University.
4. Shrivastava, Raj Krishan. India's relations with Arab East 1947-64 : Nehru period. Kanpur University.

Economics

1. Amarjit Singh. Economic and social implications of new agricultural strategy in Jammu and Kashmir with special reference to R.S. Pura Block. University of Jammu.
2. Gupta, Mool Chand. A study of the socio-economic aspects of the problem of population in India. Kanpur University.

Public Administration

1. Jain, Ramesh. The organisation and working of Life Insurance Corporation of India : A case study of Sagar Branch. University of Saugar.

Education

1. Damodar, D. A critical investigation into the practice of student teaching and evaluation programme in the Training Colleges of Andhra Pradesh. M.S. University of Baroda.
2. Desai, Harrai Bhikhabhai. Changing teacher behaviour in the teaching of mother tongue and studying its effects on pupils. M.S. University of Baroda.
3. Gandhi, Kiritkumar Amrutlal. A study of school climate as a function of personality of school personnel and pupil control ideology. M.S. University of Baroda.
4. Giri, Chhidda. A study of the personality characteristics of athletes participating in contact, non-contact and semi-contact physical activities. Punjabi University.
5. Joshi, Snehalata Madhukar. Effectiveness of micro-teaching as a technique in teacher preparation programme. M.S. University of Baroda.
6. Lalithamma, M.S. An inquiry into class-room instruction. M.S. University of Baroda.
7. Mehare, Krishan Tukaram. Evaluation of administration of secondary teachers' training colleges in Maharashtra with special reference to the principal's role. M.S. University of Baroda.
8. Patyal, Chanchalisngh Barru Ram. A study of readability indices of the prescribed geography material for Class VIII and its effectiveness on reading comprehension. Sardar Patel University.
9. Pavanāsam, Ramaswamy. Teacher behaviour and classroom dynamics. M.S. University of Baroda.
10. Upadhyaya, B.M. Construction and standardisation of an aptitude test for secondary school teachers. Saurashtra University.

Commerce

1. Dave, Gitaben Thakorlal. Urban Cooperative banks: A critical study. Sardar Patel University.

2. Vasava, Khodabhai Devjibhai. Distribution pattern of cotton textiles in Gujarat. Sardar Patel University.

HUMANITIES

Philosophy

1. Verma, Kameshwar Prasad. The concept of reality in the philosophy of F.H. Bradley. Bihar University.

Linguistics

1. Bhattacharyya, Durlab Chandra. Influence of English on the Bengali language. University of Calcutta.

Literature

English

1. Dhanaraj, Laura. The fiction of C.P. Show. Andhra University.
2. Sinha, Ujjwal Kumar. The angry young men : A critical study of some younger British novelists of the nineteen fifties. Bihar University.

Sanskrit

1. Mukherjee, Guru Sanker. Concept of riti in Sanskrit poetics. Rabindra Bharati.
2. Oberai, Madan Lal. A critical study of the technical terms (administrative and political) in Kautilya's Arthashastra. Punjabi University.
3. Shambhu Nath. Critical edition of Karka's commentary on Katyayana Srautasutras. University of Jammu.

Hindi

1. Ashtekar, Ganesh Tulsiram. Bharatendu Harischandra and Vishnushastri Chiplunkar: Life and work. Marathwada University.
2. Ramashish Prasad. Sant kavya mein rahasyavad. Bihar University.
3. Sinheswar Nath Singh. Adhunik Hindi kavita mein manviya rupankan, 1920-60. Bihar University.
4. Tripathi, Vasu Dev. Chhayavadottar Hindi kavya kee darshnik prishthbhumi. Kanpur University.

Oriya

1. Pattanayak, Ashutosh. Prachina Odiya sahityare Sri Radha. Utkal University.

Persian

1. Siddiqui, Nazir. Sheikh Ali Hazin : A critical estimation as a Persian scholar. Bihar University.

Tamil

1. Kasirajan, R. Evolution and evaluation of epic literature in Tamil with special reference to Cilappatikaaram. University of Kerala.
2. Sangeetham, Deva. The fiction of Dr. M. Varadarajan. Sri Venkateswara University.

Geography

1. Choubey, Kailash. Environment and nutritional deficiency diseases in the Eastern Malwa Plateau. University of Saugar.
2. Mishra, Chandra Bali. The changing pattern of resource use in the Eastern Satpura Region. University of Saugar.
3. Sharma, Jagannath Prasad. Land use in Eastern Lower Gandak Levee : An example from Ismailpur Panchayat, Hajipur. Bihar University.

History

1. Nagaraju, S. Rock-cut architecture of Konkan and Western Deccan : A study in chronology and development 3rd century B.C. to 4th century A.D. Karnataka University.
2. Ramaswamy Iyengar, T.E. Resistance to British rule in Ganjam, 1766-1858. Berhampur University.

CLASSIFIED ADVERTISEMENTS

PANJAB UNIVERSITY CHANDIGARH

(Advertisement No. 21/77)

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh by 30.9.1977 along with postal orders of Rs 7.50 each for posts at Sr. Nos. 1 to 5 and Rs. 5/- for post at Sr. No. 6. Number of post/s is/are indicated with the subject. Qualifications essential and desirable be pursued carefully.

1. Reader in Sanskrit at V.V.B.I.S. & I.S. Hoshiarpur (1)

2. Reader in Library Science, P.U. Library, Chandigarh (1)

(Pay scale: Rs. 1200-50-1300-60-1900).

Qualifications

Essential

(a) A first or high second class Master's degree of an Indian University or an equivalent qualification of a foreign University in the relevant subject with bright academic record.

(b) Either a research degree of doctoral standard or published research work of high standard in the subject concerned in journals of repute.

Experience

About five years' experience of teaching postgraduate classes at University or College level and experience of guiding research

Desirable for the post of Reader in Sanskrit

(a) Specialisation in Indian Epigraphy.

(b) Either a research degree of doctoral standard in Sanskrit/Ancient Indian History/Epigraphy or equivalent research publications of high standard.

3. Lecturer in Library Science, P.U. Library, Chandigarh (1)

(Pay scale: Rs. 700-40-1100-50-1600).

Qualifications

Essential

(a) A doctor's degree of research work of an equally high standard; and

(b) Consistently good academic record with Ist or high 2nd class (B in seven point scale) Master's degree in the subject of Library Science or an equivalent degree of foreign University.

Having regard to the need for developing Inter-disciplinary programmes the degree in (a) and (b) above may be in relevant subject.

Provided that if the Selection Committee is of the view that the research

work of a candidate as evident either from his thesis or from his published work is of a very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable a person possessing a consistently good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research Laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Explanations

1. Candidates for being eligible for recruitment to the posts of Lecturers must have a Ist or high second class (B in the seven point scale) at the Master's level and for determining consistently good record, average of 50-55% or (B in the seven point scale) may be expected at the two examinations prior to the Master's examinations.

The following two examples would illustrate the above

(i) A candidate who has obtained 52% marks at the Higher Secondary / Pre-University / Intermediate and 58% at the Degree level would have an average of 55% and as such could be considered.

(ii) A candidate who has obtained 60% at Higher Secondary/Pre-University/Intermediate and 50% at the Degree level would have an average of 55% and as such could be considered.

4. Deputy Librarian, P.U. Library, Chandigarh (1)

(Pay scale: Rs. 700-50-1200).

Qualifications

Essential

(a) M. Lib. Science Ist/2nd class plus Ist/2nd class M.A./M.Sc./M.Com degree.

(b) At least seven years' experience of working in an academic library in some responsible capacity.

Desirable

Doctoral degree in Library Science or published research work in Journals of repute. Knowledge of Hindi and Punjabi.

5. First Library Assistant at V.V.B.I.S. & I.S., Hoshiarpur (1)

(Pay scale: Rs 400-30-640-EB-40-800).

Qualifications Essential

M.A. in Sanskrit plus B. Lib. Science/Diploma in Library Science IInd class with at least 5 years' working experience in a University or Indological Institute Library.

Desirable

(a) Knowledge of one or more Indian languages besides Sanskrit and Hindi.

(b) Knowledge of one or more foreign languages besides English.

6. Library Assistant (4)

(Pay scale: Rs. 300-25-600)

Qualifications

Essential

M. Lib. Science Ist/2nd class plus B.Lib. Science/post-graduate Diploma in Library Science Ist/2nd class.

OR

M.A./M.Sc./M.Com Ist/2nd class plus B.Lib. Science/post-graduate Diploma in Library Science Ist/2nd class and five year's experience of working in a library.

Library Assistant at VVBIS & IS, Hoshiarpur

Qualifications

Essential

M.A. in Sanskrit Ist/2nd class plus B.Lib. Science/post-graduate diploma in Library Science Ist/2nd class and five years' experience of working in library.

Desirable

Knowledge of Xerox and other reprographical methods.

Candidates for the post of Reader who do not possess a Doctoral degree are required to submit 10 typed/cyclo-styled copies of brief resume of their research/published work. 15% posts of Lecturers will be reserved for the members of the Scheduled Castes and 2% for the members of the Scheduled Tribes, but these will be filled up by others if no suitable Scheduled Castes/Scheduled Tribes applicant is available.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees, may however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the office of the Finance and Development Officer, Panjab University, Chandigarh, by making a written request accompanied with self-addressed stamped envelope of 23 x 10 cms.

ALIGARH MUSLIM UNIVERSITY
Advertisement No. 16/77-78

Applications, on the prescribed form, are invited for the following posts :

Candidates must possess a medical qualifications included in the first or second schedule or Part II of the third schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of the educational qualifications included in Part II of the third schedule should fulfil the conditions stipulated in Section 13 (3) of the Indian Medical Council Act, 1956. Must possess a basic University or equivalent qualification entered in schedules under State/Central Medical Registration Act. (For the posts at Sl. Nos. 1 & 2 only).

1. **Professor of Orthopaedics - Surgery (Temporary).** Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications

M.S. (Orthopaedics), M.Ch. (Orthopaedics), Speciality Board of Orthopaedics Surgery (USA). As Associate Professor/Reader in Orthopaedics for five years in a Medical College.

2. **Reader in Ocular Biochemistry, Department of Ophthalmology.** Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications

M.D. (Biochemistry), M.Sc. (Biochemistry), Ph. D. (Biochemistry). D.Sc. (Biochemistry).

Experience

As Assistant Professor/Lecturer in Biochemistry for three years in Medical College.

Desirable

Ph. D. guidance and research work in Ocular Biochemistry.

3. **Professor of Sociology.** Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications

(a) A first or a high second class Master's Degree in Sociology of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) Atleast ten years experience of teaching postgraduate classes and guiding research.

4. **Reader in History (European History), Department of History—Plan post.** Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) Atleast five years experience of teaching postgraduate classes and some experience of guiding research.

Desirable

Knowledge of French/German.

Note : The requirement of a minimum period of experience of teaching postgraduate classes may be relaxed in cases of exceptional academic qualifications.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally

or by sending a self-addressed envelope of 23×10cm. Last date for receipt of applications is **12th September, 1977.** Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. to equal to one single second class railway fare only.

Jamalur Rahman
REGISTRAR

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ALIGARH MUSLIM UNIVERSITY
Advertisement No 18/77/78

Applications, on the prescribed form, are invited for the post of Principal, Jawaharlal Nehru Medical College.

Scale Rs. 1500-60-1800-100-200-125/2-2500 plus allowances as admissible under rules and not-practising allowances provided he is also Professor of the subject of his specialisation with clinical duties attached to it.

Candidates must possess a Medical qualification included in the first or second schedule or Part II of the third schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of educational qualifications included in Part II of the third schedule should fulfil the conditions stipulated in Section 13 (3) of the Indian Medical Council Act, 1956. Must possess a basic University or equivalent qualification entered in schedules under State/Central Medical Registration Act.

Qualifications

M.D./M.S./M.R.C.P./F.R.C.P./F.R.C.S. or an equivalent qualification in any branch of Medical Science. Atleast five years experience as Professor in a Medical College.

Preference will be given to those who have long experience as Professor/Head of a Department or Principal of a Medical College particularly those who have held responsible position connected with the establishment of a teaching hospital.

The Principal of the College will also have to work as the Chief Superintendent of the Medical College Hospital.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self addressed envelope of 23x10 cm. Last date for receipt of applications is **12th September, 1977.** Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

Jamalur Rahman
REGISTRAR

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ALIGARH MUSLIM UNIVERSITY
Advertisement No. 19/77-78

Applications, on the prescribed form, are invited for the following posts :

Candidates must possess Medical qualifications included in first or second

schedule or Part II of the third schedule (other than licentiate qualifications) of the Indian Medical Council Act, 1956. Holders of educational qualifications included in Part II of third schedule should fulfil the conditions stipulated in Section 13(3) of the Indian Medical Council Act, 1956. Must possess a basic University or equivalent qualification entered in schedules under State/Central Medical Registration Act (for the posts at Sl. Nos. one and two only).

1. **Professor of Medicine.** Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications

M.D. (Medicine), M.D. (General Medicine), M.R.C.P., Speciality Board of Internal Medicine (USA).

Experience as Associate Professor/Reader in General Medicine for five years in a Medical College.

2. **Readers in Medicine.** Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications

M.D. (Medicine), M.D. (General Medicine), M.R.C.P., Speciality Board of Internal Medicine (USA).

As Assistant Professor/Lecturer in General Medicine for three years in a Medical College.

3. **Lecturer in Islamic Studies (Temporary but likely to become permanent).** Scale Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

(a) A Doctor's Degree or research work of an equally high standard; and (b) Consistently good academic record with first or high second class (B in the seven point scale) Master's Degree of an Indian University or an equivalent foreign qualification in Islamic Studies, Islamic Culture Islamic History and Culture, Arabic, Persian or Economics, Political Science or Sociology with special knowledge of Muslim Contribution in these fields.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally

or by sending a self addressed envelope of 23×10 cm. Last date for receipt of applications is **17th September, 1977**. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

**Jamalur Rahman
REGISTRAR**

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MARATHWADA UNIVERSITY **No. ESTT/DEPT/ADVT. 50**

Applications are invited for the following Posts in the University Departments so as to reach the undersigned on or before **September 26, 1977**.

1. Professor of History (one)
Rs. 1100-50-1300-60-1600
2. Professor of Commerce (one)
Rs. 1100-50-1300-60-1600
3. Reader in Econometrics/Mathematical Economics (One)
Rs. 700-50-1250
4. *Reader in Economics (One)
Rs. 700-50-1250
5. Reader in Political Science (One)
Rs. 700-50-1250
6. *Reader in Sociology (One)
Rs. 700-50-1250
7. *Reader in Botany (One)
Rs. 700-50-1250
8. *a) Reader in Physics (One)
Rs. 700-50-1250
(b) Reader in Physics (Two)
Rs. 700-50-1250
9. Reader in Bio-Chemistry (One)
Rs. 700-50-1250
10. *Lecturer in Hindi (One)
Rs. 400-40-800-50-950
11. Lecturer in German (One)
Rs. 400-40-800-50-950
12. Lecturer in Chinese (One)
Rs. 400-40-800-50-950
13. *Lecturer in Russian (One)
Rs. 400-40-800-50-950
14. *Lecturer in History (Two)
Rs. 400-40-800-50-950
15. *Lecturer in Political Science (One)
Rs. 400-40-800-50-950
16. Lecturer in Sociology (Social Work) (One)
Rs. 400-40-800-50-950
17. *Lecturer in Organic Chemistry (One)
Rs. 400-40-800-50-950
18. *Lecturer in Inorganic Chemistry (One)
Rs. 400-40-800-50-950
19. *Lecturer in Physics (One)
Rs. 400-40-800-50-950
20. Lecturer in Botany (One)
Rs. 400-40-800-50-950
21. *Lecturer in Mathematics (One)
Rs. 400-40-800-50-950
22. Lecturer in Zoology (One)
Rs. 400-40-800-50-950

The scales of pay carry with them the benefits of D.A. in accordance with the rules of the University. The scales of pay are likely to be revised. Out of the posts of Readers and Lecturers mentioned in the advertisement, 34% posts are reserved for candidates belonging to S.C., S.T., D.N.T./N.T. and O.B.C

*Temporary but likely to be made permanent.

GENERAL QUALIFICATIONS

1. Professor

At least a Second Class Master's Degree in the subject. A research degree of an Indian or Foreign University of a Doctorate standard and/or published research work of an acknowledged merit.

Ten year's total teaching experience in the subject in the University or College including about five years experience of teaching Post-Graduate classes. In addition, a person should possess experience of undertaking and guiding research in the subject.

2. Reader

At least a Second Class Master's Degree in the subject. A research Degree of an Indian or Foreign University of a Doctorate standard and/or published research work of an acknowledged merit, in the subject.

Seven year's teaching experience in the University or College, preferably wholly at Post-Graduate level, research experience and ability to undertake and guide research in the subject will be considered a desirable qualification.

3. Lecturer

At least a Second Class Master's Degree in the subject from a recognised University. A Research degree of a doctorate standard or published research work of acknowledged merit in the subject.

Five year's teaching experience to degree and/or post-graduate classes.

Lecturer in Russian and German

At least a Second Class Master's degree in the concerned language from an Indian University or an equivalent degree from foreign University.

Lecturer in Chinese

At least a Second Class Master's Degree in any subject and Diploma in Chinese language.

Teaching experience in the case of foreign language lecturers can be relaxed.

SPECIAL QUALIFICATIONS

1. Professor of History

Modern History or Ancient Indian History and Culture or Scholar of Eminence in any field of History.

2. Professor of Commerce

Financial Management

3. Reader in Econometrics, Mathematical Economics

A research degree of Doctorate standard in the subject of Econometrics/Mathematical/Economics and/or published original Research work of acknowledged merit in the subject. Five years professional experience.

4. Reader in Economics

Industrial Economics or Labour Economics or Area Development and Regional Planning.

5. Reader in Political Science

Modern Government

6. Reader in Sociology

Sociology of Deviation or Industrial Sociology or Modernisation.

7. Reader in Botany

Angiosperms and Plant Taxonomy.

8. Reader in Physics

1. Spectroscopy
2. Nuclear Physics or Particle Physics or Cosmic rays (Theoretical preferred).

3. Solid State Physics.

9. Reader in Bio Chemistry

Research work in at least one of the following fields of specialisation.

1. Clinical Bio-Chemistry,
2. Enzyme Chemistry,
3. Amino acid metabolism,
4. Drug Metabolism and Biochemical Pharmacology,
5. Carbohydrate Chemistry.

10. Lecturer in Hindi

A Scholar from any branch,

11 to 13. Lecturer in Russian/Chinese/German

Advanced training in the country concerned and experience in teaching and/or translation will be desirable.

14. Lecturer in History

1. Archaeology,
2. Ancient Indian History and Culture.

15. Lecturer in Political Science

Field of Government and Politics

16. Lecturer in Sociology

Social Work.

17. Lecturer in Chemistry

Organic Chemistry.

18. Lecturer in Chemistry

Inorganic Chemistry.

19. Lecturer in Physics

Solid State Physics.

20. Lecturer in Botany

Floral Anatomy and Morphology or Ecology or Physiology.

21. Lecturer in Mathematics

Complex Analysis or Topology (General or Algebraic) or Number Theory or Continuum Mechanics or Fluid Dynamics or Elasticity.

22. Lecturer in Zoology

Protozoology

Candidates applying for the post of Professor and Reader should ordinarily be below the age of 45 years, and those applying for the post of Lecturer should ordinarily be below the age of 35 years. The age limit can be relaxed in the case of deserving candidates.

The teachers appointed by the University will be required to pass a test in Marathi before their confirmation in the respective posts.

Eight copies of applications together with eight copies of each of the testimonials, if any, separately for each post giving particulars in the prescribed form along with a Postal Order of Rs. 3/ (towards the cost of the form) should be sent to the Registrar so as to reach him not later than **September 26, 1977**. Testimonials should be attested by a Principal of College or a member of the Senate of Marathwada University or by Gazetted Officer. The prescribed application forms will be supplied to the candidates on request accompanied by a self addressed envelope (23x10 c.m.) bearing postal stamps worth Re. 1/- for the postage separately for each post.

Candidates, who are employed at present, must submit their applications through their employers.

The University authorities will have the right to relax any one of the condition in the case of extra-ordinary candidates.

Canvassing, direct or indirect will be disqualification.

**University Campus
Aurangabad.**

**V.K. Dhamankar
REGISTRAR**

**THE UNIVERSITY OF BURDWAN
WEST BENGAL**

Advertisement No. 6 Dated 12.8.77

Applications in prescribed form are invited for the following posts on U.G.C.'s pay scales with admissible allowances and Contributory Provident Fund benefits.

- (A) Department of Commerce—Reader—One.
- (B) Department of History—(i) Reader—One; (ii) Lecturer—One.
- (C) Department of Economics—Lecturer—Two.

Posts under (A) & (B) are permanent. One post under (C) is permanent, the other temporary against Study Leave vacancy.

Minimum Qualification

- (a) Doctorate degree or Published work of an equally high standard; and
- (b) Consistently good academic record with 1st or high 2nd class (B+) Master's Degree in the subject or an equivalent degree of a Foreign University.

Additional requirements for Readership

- (i) At least five years' teaching experience in postgraduate class, (ii) ability to Supervise Research work, (iii) Publication of sufficient merit.

Desirable in all cases

Doctorate degree in any of the fields of specialisation stated below; Research publications of high order.

Specialisations required

For (A) Postgraduate qualification in Management from any recognised University or Institute of Management with specialization in Organisational Behaviour/Industrial Psychology/Labour & Industrial Relations/Man Power Planning and Management of Human Resources/Labour Laws/Labour Economics.

For (B) (i) Mediaeval Indian History and for (B) (ii) Modern History.

For (C) Statistics & Econometrics/International Trade/Agricultural Economics.

For application form and other particulars, please write to the office of the undersigned with a self address and stamped (40 p.) envelope (10" x 5").

Last date of receiving applications with requisite fee of Rs. 5/- (payable by crossed I.P.O. drawn in favour of Finance Officer, of the University) is **24.9.77.**

**A.K. Banerji
REGISTRAR**

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MARATHWADA UNIVERSITY

No. Estt/Dept./Advt./50

Applications are invited for the following posts:

Professors (Pay-scale Rs 1100-50-1300-60-1600) of History, Commerce one each.

Readers

(Pay scale Rs 700-50-1250) in Economics/Mathematical Economics, Economics (Temporary), Political Science, Sociology, Botany and Bio-Chemistry, one each and Reader in Physics—Three.

Lecturers

(Pay scale Rs 400-40-800-50-950) in

Hindi, German, Chinese, Russian, Political Science, Sociology (Social Work), Organic Chemistry, Inorganic Chemistry, Physics, Botany and Mathematics—one each and Lecturer in History—Two.

The scales of pay carry with them the benefits of Dearness Allowance in accordance with the rules of the University and the same are likely to be revised. Out of the posts of Readers, and Lecturers mentioned in this advertisement, 34% posts are reserved for candidates belonging to Scheduled Castes, Scheduled Tribes, Denotified Tribes & Nomedic tribes and other Backward classes.

General Qualifications

1. Professor

At least a Second Class Master's Degree in the subject. A research degree for an Indian or Foreign University of a Doctorate standard and/or published research work of an acknowledged merit.

Ten years' teaching experience in the subject in the University or college, including about five years' experience of teaching post-graduate classes. In addition, a person should possess experience of undertaking and guiding research in the subject.

2. Reader

At least a Second Class Master's Degree in the subject. A research degree of an Indian or foreign University of a Doctorate standard and/or published research work of acknowledged merit in the subject.

Seven years' teaching experience in the University or college, preferably wholly at post-graduate level, research experience and ability to undertake and guide research in the subject will be considered a desirable qualification.

3. Lecturer

At least a Second Class Master's Degree in the subject from a recognised University. A Research degree of a doctorate standard or published research work of acknowledged merit in the subject.

Five years' teaching experience to degree and/or post-graduate classes.

Lecturer in Russian and German

At least a Second Class Master's Degree in the concerned language from an Indian University or an equivalent degree from foreign University.

Lecturer in Chinese

At least a Second Class Master's Degree in any subject and Diploma in Chinese language.

Teaching experience in the case of foreign language lecturers can be relaxed.

In addition to general qualifications, special qualifications given are in the detailed advertisement, which can be obtained along with the application forms.

Candidates applying for the posts of Professors and Readers could ordinarily be below the age of 45 years and those applying for the posts of Lecturers should ordinarily be below the age of 35 years. The age limit can be relaxed in the cases of deserving candidates.

The teachers appointed by the University will be required to pass a test in

Marathi before their confirmation in the respective posts.

Eight copies of application together with eight copies of each of the testimonials, if any, separately for each post giving particulars in the prescribed form along with a postal order of Rs. 3/- (towards the cost of the form) should be sent to the Registrar so as to reach him not later than **September 26, 1977.** The prescribed application forms will be supplied to the candidates on request accompanied by a self addressed envelope (23x10 cms.) bearing postal stamps worth Re. 1/- for the postage separately for each post.

Candidates who are employed at present, must submit their applications through their employers.

The University authorities will have the right to relax one of the conditions in the case of extraordinary candidates.

Canvassing, direct or indirect will be disqualification.

**V.K. Dhamankar
REGISTRAR**

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UNIVERSITY OF INDORE

University House

Indore-452001 (M.P.)

**No. Estt./III(13)/77 16th August, '77
Advertisement**

Applications on the prescribed form obtainable from the University office on payment of Rs. 3/- (in the shape of crossed Indian Postal Order) are invited for two posts of Reader in the University Teaching Department of Education in the scale of pay of Rs. 1100-50-1600/-.

2. Qualifications

- (a) A first or second class Master's degree of an Indian University or an equivalent qualifications of a foreign University in the subject concerned.
- (b) Either a degree of the doctorate standard or published research work of high standard.
- (c) Not less than 5 years experience of postgraduate teaching and three years experience of guiding research. Working knowledge of Hindi shall be a desirable qualification.

3. The above scale carry with it D.A. and C.P.F. benefits as per University rules. A higher start can be given to deserving candidates.

4. Preference will be given to Scheduled castes and Scheduled Tribe candidates if found suitable. Candidates already in service should apply through proper channel.

5. Applications (8 copies) duly filled-in and accompanied with crossed Indian Postal Order of Rs. 10/- should reach the undersigned on or before **30th September, 1977**, the envelope being superscribed as "APPLICATION FOR READER IN EDUCATION".

6. The University reserves the right to fill-up or not to fill-up the post and/or to call only selected candidates for interview at their own cost.

REGISTRAR

In modification of the advertisement already published in August 16, 1977 issue of the Journal, the following advertisement is issued.

**NAGARJUNA UNIVERSITY
NAGARJUNANAGAR**

NU/Estt/77-78 Dt. 18-8-1977

Applications in prescribed forms are invited so as to reach the Registrar on or before 19th September, 1977 for the following posts in the Nagarjuna University. Each application must be accompanied by a crossed Indian Postal Order or a Demand Draft for Rs. 10/- in favour of the Registrar, Nagarjuna University, Nagarjunanagar 522 510 (A.P.)

Subject	Professors	Readers	Lecturers
1. Economics	—	2	1
2. Mathematics	—	2	1
3. English	—	1	1
4. Commerce	—	2	2
5. Archaeology	—	1	1
6. Telugu	—	2	2
7. Physics	—	—	1
8. Chemistry	—	1	—
9. Botany	—	1	—
10. Zoology	1	1	—

Other Posts

- (1) Deputy Librarian 1
- (2) Physical Director 1
- (3) Controller of Examinations 1
- (4) Assistant Registrars 2

Scales of Pay

Professor: Rs 1,500-60 1,800-100-2,000

Assessment $\frac{125}{2}$ —2,500

Reader : Rs. 1,200-50-1,300-60-1,900

Lecturer : Rs 700-40-1,100-50-1,600

Deputy Librarian : Rs 700-50-1,250

Physical Director: Rs. 400-40-800-50-950

Controller of Examinations: Rs 700-50-1,250.

Assistant Registrar: Rs 400-40-800-50-950

Qualifications

(a) Professors & Readers

Essential

- (1) A first or high second class Master's Degree of an Indian University or an equivalent qualification from a foreign University in the subject.
- (2) A research Degree of Doctorate standard or published work of a high standard in the subject.
- (3) Experience of teaching Honours or postgraduate classes for a period of ten years for Professors/five years for Readers, and experience of guiding research for both the posts.

Desirable

The following specialisations are desirable.

(1) Economics

Mathematical Economics for one Reader's post.

(2) Mathematics

(1) Functional Analysis for one Reader's post.

(2) Complex Analysis or Algebraic Geometry for the other.

(3) English

British Literature or Indian Writing in English or Commonwealth Literature or Literary Criticism for Reader's post.

(4) Commerce

(1) Personnel Management and Industrial Relations for one Reader's post,

(2) Either advanced Banking and Monetary Policy or Industrial Economics for the other Reader's post.

(5) Archaeology

Indian Art and Architecture with special reference to Buddhism for Reader's post.

(6) Telugu

(1) Grammatical Theories for one Reader's post.

(2) Linguistics for another Reader's post.

(7) Chemistry

Inorganic or Physical or Physical Organic Chemistry.

(8) Botany

Developmental Morphology.

(9) Zoology

Limnology for the Professor's post. Physiology/Fisheries/Limnology/Cytology for Reader's post.

(b) Lecturers

Essentials

- (1) At least a first or high second class Master's Degree of an Indian University or an equivalent qualification of a foreign University.
- (2) A research degree or a good record of research work.

Desirable

1. Telugu

(1) M.A. (Sanskrit)/Siromani/Vidya Praveena/Basha Praveena.

(2) M.A. (Telugu) I or II class of a recognised University.

(3) Ph. D. in Telugu is preferable.

2. Archaeology

Specialisation in Epigraphy or Numismatics or environmental Archaeology. M Phil or Ph.D. degree or evidence

of published work and a certificate of proficiency in field work.

(c) Deputy Librarian

(a) First or Second class M.A./M.Sc./M.Com. and a first or second class B Lib. Science or Diploma in Library Science. The Degree of M.Lib. Science being a preferential qualification.

(b) At least 7 years experience as Librarian or in a responsible professional capacity in a Library.

(c) Good academic qualifications and research experience with publications.

(d) Physical Director

(a) A Master's degree in Physical Education or a Master's degree in Arts/Science etc. with a post-graduate diploma in Physical Education.

Preference will be given to a person holding Master's degree in Physical Education.

(b) At least 5 years experience of organising games and sports at University level. Proficiency in games upto inter-University and national level.

(e) Controller of Examinations

(1) First or Second class post-graduate degree of any University or its equivalent.

(2) Experience in an administrative capacity for a period of 5 years or as Assistant Registrar/Assistant Controller of Examinations or Finance for a period of 5 years.

(f) Assistant Registrars

(1) First or Second class post-graduate degree of any University or its equivalent.

(2) Experience in an administrative capacity for a period of 3 years or as an Office Superintendent for a period of 5 years.

Note

(1) Internal candidates if qualified are also eligible to apply for direct recruitment.

(2) Those who have applied earlier in response to the Advertisement No. NU/TS/76-77, dated 1-9-1976 need not apply. Any relevant additional information may, however, be furnished.

(3) Reservations to Scheduled Castes, Scheduled Tribes and Backward classes exist for the posts of Lecturers and non-teaching staff as per Government Rules.

Requisitions for the prescribed application forms may be made to the Registrar, Nagarjuna University, Nagarjunanagar accompanied by a self-addressed and a stamped-envelope, and a Demand Draft or crossed Indian Postal Order for one rupee in favour of the Registrar, Nagarjuna University, Nagarjunanagar Pin 522 510 (A.P.).

The University reserves the right to fill or not to fill any or all of the above posts.

**Kilaru Srimannarayana
REGISTRAR**

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A CHRONICLE OF HIGHER EDUCATION & RESEARCH OCTOBER 1, 1977 80 PAISE



- **Medical Education**
- **Education Through Open University**
- **Role of Higher Education in National Development**
- **Working of Semesters in Karnataka**

The Students Health Home, Calcutta celebrated its silver jubilee in September. It provides the largest non-government students health service in the world, catering to the needs of over 1,50,000 students.

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AMRITSAR**

Advertisement No. 23/77

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For post of Reader in Punjabi Language, Literature & Culture: (i) A Doctor's degree in Linguistics/Literature or published work of an equally high standard in these fields. (ii) Consistently good academic record with 1st or High 2nd Class (b+) Master's degree of an Indian University in Punjabi/Linguistics/Sanskrit, or an equivalent degree of a foreign University, with the proviso that the candidate having a Master's degree in Punjabi must have a sound knowledge of Linguistics and one who has a Master's degree in Linguistics/Sanskrit must have a sound knowledge of Punjabi, (iii) About 5 years experience of teaching post-graduate classes and/or guiding research.

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Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (i) and (ii) above.

For the 1st and 2nd posts: Master's degree in Punjabi/Sociology/Anthropology/Fine Arts with the proviso that a candidate having Master's degree in Punjabi must have sound grounding in Punjabi Culture/Folklore and one who is M.A. in Sociology/Anthropology/Fine Arts must have proficiency in Punjabi.

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Essential: (i) Consistently good academic record with first or high second class (b+) Master's degree of Indian University or equivalent qualification of foreign University in the subject of Punjabi. (ii) Either the degree of Ph.D. or equivalent research degree or published research work of high standard relating to any field of Sikh Literature. (iii) Thorough knowledge of Sikh Scripture. (iv) Continuing Post-doctoral research in Sikh Literature in case of Ph.Ds.

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Note

1. If the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualification prescribed in (i) above.
2. The Lecturer may be required to conduct research and/or teach or do any other related work assigned to him by the Department.
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Administration: (i) A Doctor's degree or published work of an equally high standard; and (ii) Consistently good academic record with 1st or High 2nd Class (b+) Master's degree in Public Administration or an equivalent degree of a foreign University (iii) Teaching/research experience and knowledge of Punjabi and a foreign language other than English will be additional qualifications.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualification prescribed in (ii) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record (due weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed on the condition that he will have to obtain a Doctor's degree or give evidence of published work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

Consistently good academic record means overall record of all assessments throughout the academic career leading to Master's degree which should at least be (b+) or high Second Class.

For the post of Manager University Press: (i) Graduate from an Indian University or an equivalent qualifications from a foreign University, (ii) Diploma Course in Printing Technology from a recognised Institution. (iii) At least 5 years' practical experience of working in a first rate printing press.

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**Lakha Singh Sandhu
REGISTRAR**

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and reviews are individual and do
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Editor : ANJNI KUMAR

The Relevance of Students Health Home in Today's Society

The last twenty-five years have seen many changes in our country and society—some barely discernible, others truly radical. Along with the visible physical transformations there have been, not unexpectedly, noticeable reorientations of our attitudes, beliefs, hopes and prejudices. For, an institution like Students Health Home changes—in the form of expansion of facilities, a new set of workers, infusion of new ideas—has also been inevitable. In this context, it is quite natural to ask the questions: how relevant is an organisation like Students Health Home in today's society?

In trying to answer this question a natural, albeit cynical perspective is that in today's situation institutions like Students Health Home are non-viable.

It is undeniable that self preservation and advancement are the uppermost features of our value system today and where is the room for an institution which is totally based on the concept of collective self-help in this context? Most of our demands, including those made collectively, are geared towards our rather narrow self or sectional interests. An appropriate metaphor for our society today is the boat with a few people in it, trying to fend off many others desperately trying to scamper into the safety of the boat. In this fierce struggle for bare survival where is the time or energy to devote to others and where is the place for institution like Students Health Home?

Needless to say this bleak point of view about the futility or the plain irrelevance of concern for others merely aggravate the existing malaise. Students Health Home is a refutation of such a bleak view; it is an island in a sea of social disintegration. It is a working example of the belief that perhaps we can work collectively, survive together and give a lie to the thesis of inevitable Malthusian doom. It is difficult to imagine that a vast number would share this optimism, and incredibly more so to be able to enthuse others in this kind of perspective. But we cannot escape this onerous task. It is the task of institutions like Students Health Home to emphasise this outlook and hold out a new promise. The extent of success in this direction is a criterion of its relevance.

It has been remarked that the modern age has no heroes. To the young people and the student community today, everyone appears to be trained. This view may have ample justification but this makes it all the more imperative for us to look for something bigger than ourselves, something that would integrate and hold us. Students Health Home in its small way provides such a cohesive alternative to our youth. Maybe just one small alternative; but an alternative nonetheless. In working for it we work for something bigger than our individual selves. We are sometimes touched by the magic of grace.

Many of those involved in the struggle were contributing their energy to constructive schemes in education, social welfare and so on. Building a university, giving shape to a new scheme of education or collective self-help or building an industry were perceived by most as direct contributions to our endeavour for freedom and national dignity. There was thus a deep and natural, even though unseen, link between Satyagraha on the one hand and setting up of the Viswa Bharati, for instance, on the other. They were all pieces of the same mosaic.

Today that perception appears to be fractured. We do not perceive any link between a clear cut political action to change the

Resume of a talk given at the inauguration of a short training course for the workers of Students' Health Home, Calcutta.

(Continued on page 523)

Medical Education

Problems and Remedies

Tarun Banerjee*

Medical education, besides having professional aspect, has a great social implication. It is nearly a decade or more that public and profession are both unhappy about the state of medical education in West Bengal. The image of a freshly qualified doctor is not only tarnished here and abroad, but the public apathy has turned into antipathy. The recent events during the current university examinations in Calcutta has raised the question of the ability of such personnel to look after the health of the community. There is no doubt that the quality of a qualified doctor today is much below the expected standard.

There are many reasons why this standard has gone down. Let us probe into the salient features as would be permissible within this space. This will help us not only to understand the problems but also to formulate a plan to improve the standard.

The State Medical Service broadly comprises of:

- (a) Health Service for the public
- (b) Medical Education to prepare future doctors
- (c) Medical Research for academic achievements and assessment of newer methodology, medicines etc., for clinical application.

At present there is no clear demarcation between these three facets. That this demarcation is absolutely necessary has been long appreciated by progressive countries.

Today, the same Health Directorate is responsible for the running of the teaching institutions with all its highly specialised departments as well as to the working of the primary or subsidiary health centres in a remote village. This responsibility includes from manning a department with medical, para-medical and non-medical personnel to the supply of implements, medicines, diets and all other essentials. This could have been possible at the colonial time with only one medical college and a few district and sub-divisional hospitals. With the colossal expansion of the present health department, it is virtually impossible for a Director of Health Services to do the full justice to all the prevailing needs of the State Health Department. The medical education portion must be separated from the Health Service activity of the Directorate.

There are five teaching institutions under the Calcutta University and one each under the Burdwan and the North Bengal University. A very amusing thing which might be a revelation to many is the fact that the students admission is directed by the Government, the teaching is imparted by the institutions and the examinations are conducted by the university, while the registration is granted for practising by the Medical Council of India.

There is a lack of proper organisational cohesion between activities of these different sections. Complicated procedures of selection leads to the delay in admission which in its turn delays and upsets the teaching schedules of the medical colleges thereby affecting the programme of the university examinations and the vicious cycle of postponement of examination rolls on.

Pitfalls of the present system

On admission: Previously students were admitted on merit. The weightage for scheduled castes and the scheduled tribes are national policy. But to admit on district quota basis is definitely a handicap for the more intelligent students from more competitive areas. A student with lower marks can be admitted from certain districts while a student with higher marks may not succeed if the area he represents is more competitive. To many, this arrangement is beset with more political overlay than the original argument of the upliftment of the backward areas. More so, when we find that after graduation though the admission is on district quota basis—their services are not compulsory to the district concerned. If district quota for admission has to be maintained, it is equally necessary that the advantageously selected candidates should be bound down to serve in their respective districts for a stipulated period of time after graduation.

Another point to consider in the method of admission is the absence of personal interviews during selection for admission. All medical teachers feel that to be a good doctor one must have an aptitude to communicate with the patients. In a selection-interview, the personality, reaction to different circumstances and assessment for two way communication are possible. A doctor, besides being a technician, must have a quality to be useful to the community. This cannot be assessed on paper alone.

Lastly, the procedure of admission unless simplified and orientated with fixed dates—it sets up a problem for the maintenance of the teaching schedule of the medical colleges. Though the teaching schedule is planned to start from the 1st of July every year, the admission by the Central Selection Committee is never on time; as for example this year it will not be complete before the 15th November. The first semester of six months which should have ended in December—will be running behind the schedule. This will ultimately affect the university examination, so the candidate will lose 6 months before he starts his medical course.

A. On Teaching Centres

Since Independence, medical colleges have sprouted up to satisfy popular demands. Even a factory producing inanimate objects require trained technicians and skilled labour. But the medical Colleges were set up without the thought of the availability of properly qualified and experienced teachers.

The different departments were not developed with the emphasis on teaching. The Health Directorate was more concerned with giving service to the sick—for which new hospitals could have been built—but

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instead more and more beds were cramped in the already congested wards. Today, in some cases it is an apology for a medical care. Can we think of having two to four patients just after confinement kept together on the floor over a common blanket sharing all the blood and the muck following childbirth? We are only in a hurry to discharge them—may be after 24 hours of confinement.

By and large all clinical departments are over crowded. There is always a long queue for admission of the cold cases in the outpatient departments. The lack of space is a great handicap. There is so little space to move around that it does not create an atmosphere for the students to learn in the outpatient department nor are there proper facilities for the bedside clinic.

Though in the clinical side there is congestion, at least some facilities are available as the Directorate is geared to the care of the sick. But in the pre-clinical and the paraclinical departments like Anatomy, Physiology, Pathology, Pharmacology etc., where the fundamentals are taught then there is an appalling neglect. Alas, nobody realises that a teaching institution should be fundamentally oriented to teach the medical students while the care of the sick in these places is only an ancillary part of the teaching system.

A recent inspection team of the university visited different medical colleges in the city. The report is still awaiting, but all concerned were unanimous on some basic problems.

1. There is no uniformity of standard. Each college is somehow managing its pre and para-clinical teaching with the lack of space, equipment and personnel. The situation is not at all conducive to attract students to their practical work which is so vital for the professional teaching and training.

2. The whole emphasis of the administration is more on the health service to the patients and peripherally to fulfil the need for the teaching of the medical students.

3. The colleges were originally developed to admit 100 students each year, the facilities in space, equipment and the personnel were as formulated by the Medical Council of India for 100 students. To bring out more doctors now each college in our city admits 150 students in a year. This causes a great strain on all concerned, the teachers and the students alike. At times for the lack of space and facilities some practical classes stand out to be a more demonstration where the students cannot perform the practical work themselves. Will not the students be apathetic to their studies in such chaotic situations? We are lucky that they have not yet lodged a movement for proper facilities for their teaching.

B. Teachers

The present system of transferring one teacher from one college to another as a part of a transferable job of the West Bengal Health Services is again an obsolete and impractical idea which has an all round derogatory effect. It may be interesting to know that the post of the Principal of a particular medical college was occupied by eleven incumbents

within a span of seven years. So how can we expect involvement what to speak of dedication?

Not only are the Principals posted for the Directorate but the transference of the teachers from one institution to another always causes a problem. The teachers lose their involvement with the institution. They are constantly worked and worried and feel insecure about their position and waste a lot of time to contact people in the Writers' Buildings for better posting—outwitting a colleague. This attitude must be stopped. Furthermore, the Principal has not only no proper control on the teachers. As his opinion is rarely sought—but for the same reason ability to teach is never properly assessed. The result—the seniority is the best criteria for promotion. The question of non-practising compulsion in certain posts also debars better and more competent personnel to compete in some cases. Moreover, the Government regulation to recognise 3 years service in the rural areas to be equivalent to 1 year teaching is not only farcical but also is unsuccessful to draw more persons to the rural service. As for the preclinical and the paraclinical teachers, due to the lack of incentive or high emoluments, not many persons specialise in these fields. The result is a great dearth of such teachers. Unless this problem is looked after properly, we shall very soon face a situation where these departments will not be able to take up their responsibilities.

It is also imperative that the guardians should realise their shares of the problem. They should persuade their wards in taking full advantage of their training and dissuading them from accepting unfair means in the examination.

C. Teaching

Within the scope of the curriculum as prescribed by the Calcutta University, the teaching schedule is not uniform, it is not time bound and the lack of space and the teaching personnel gives rise to considerable variation. Because of the lack of uniformity of standard of the teaching facilities, the ultimate training of a student varies, depending on his luck as to where he would be admitted originally. To obviate this, a recent syllabus of the semesterised teaching with a scope of internal assessment has been formulated by the Undergraduate Medical Council of the Calcutta University, it is just being introduced.

D. Students

Somehow, we have not been able to make a medical student realise his responsibility. Unlike a graduate in other fields—where the problem of employment starts after graduation. A medical student knows that he as soon as he graduates he has a source of employment which should make him feel secured. Our State can boast of full employment to our doctors. We have to make them realise that with an assured future they have to take up their studies seriously and make the best use of the facilities available to them to pass on examination by copying or taking advantage of other means will give them a degree but quality-wise they would be useless like a counterfeit coin—already their applications are turned down in many quarters when it is found that they

have graduated from the Calcutta University after the year '61.

On University Examinations

The biggest calamity that has brought the state of affairs in the medical education of our province is the postponement of examinations. Today, a five years course requires seven years to appear in the Final M.B.B.S. Examination from the date of admission. There are several reasons which cannot be taken up in detail for want of space, but the postponement of the examinations for whatever reasons encourages demands for further postponement.

The university cannot plan the dates well ahead and it is not oriented to a yearly calendar. The method of working of Controller's Department is responsible to a great extent for late publication of the results which in its turn delays conduction of the subsequent examinations as there must be a definite time interval between publication of the results and the next examination. The Controller's Department have so many examinations to conduct of which the M.B.B.S. is only one of them. So the real difficulties of the medical colleges in completing the course with delayed publication of the results and other facets of the problem are never appreciated. Many a time, problems created due to absence of co-ordination and the lack of liaison between the medical college authorities and the Controller's Department, the problem is for nothing insoluble. Some problems which seem difficult to solve are mere reflections of absence of the co-ordination, the lack of liaison between the medical colleges authorities and the Department of the Controller of Examinations of the university.

On Medical Council of India

The regulations for teaching and the training of the medical students as formulated by the Medical Council of India are still not taken to be mandatory by many. The Medical Council of India sends Inspectors to check the different medical colleges for available facilities for teaching and training of the undergraduate medical students. Either they are soft or pressurised or their strictures are not paid any heed to by the Government. Many of the colleges are though substandard for teaching are not disaffiliated for the sake of the 'poor students'—the result is we produce 'poor doctors' instead.

Remedies

The main problem is fresh orientation. This will call for bringing about a revolutionary change in our outlook and do away with the old obsolete working of the old time bureaucratic methods. A wholesale remodelling of the present structures is essential. A separate Director for the Undergraduate Medical Education at par with the Director of Health Services will have full independence, and answerable only to the Minister is needed. He should be assisted by chosen members of the profession who are long associated with medical teaching. The policy making and the execution of the policy at the highest level of medical education should be left to the medical educationists

and not to the medical administrators who are only promoted to higher posts by the seniority at the fag end of their career.

There should be two distinct cadres in the health service. The teacher cadres should start from the lowest grade of higher teaching personnels e.g., starting from the Lecturer to Assistant Professor, Readers, Associate Professors etc. These senior teaching posts should be recruited against individual post by the proper advertisement through proper selection committee on contract basis and not as a part of transferable health service personnel. Their services will be under the Director of Medical Education, whereas the health service personnel from medical officers in different health centres, subdivisional medical offices, D.M.O.'s and C.M.O.'s etc., will be under the supervision of the Directorate of Health Services. For the purpose of training future teachers, the junior teaching jobs like Demonstrators, Clinical Tutors, Resident Surgeons, Registrars and Stipendiary House Staff should also be under the same Director of Health Services.

The different medical colleges should be completely autonomous. The colleges should be governed by the formation of a Governing Body whose Chairman should be the Director of Medical Education and Convener-Secretary should be the Principal of the college. The members should constitute from among the representatives of teachers, staff, students, and people's representatives in the Legislative Assembly.

The Director of Medical Education will have a direct liaison with the university as well as the Medical Council of India. He will see that the college maintains the standards required for teaching and the training of the students.

Each college will have its Principal selected through advertisement by a Special Committee under the Minister concerned and once selected he should be given wide power in the running of the institution with franchise to promote and demote. The post of Principal as Head of the teachers should be separated from that of the Superintendent of the administrative head of the hospital functioning and from day to day health care needs of the patients. A standardisation committee for all the medical colleges should be immediately formed and on the basis of their recommendation necessary remodelling of all the departments of all the colleges should be rationalised as stated above. The Principal of the college will be responsible to make these alterations within a sanctioned period of time, under the guidance of the Governing Body. Once the standardisation has been formulated Governing Body of each college should be provided with a requisite amount of money necessary for the development and the running of the department as a forum of medical teaching as would be envisaged for non-medical teaching colleges.

Once the teachers are selected they will not only be involved with the institution but also will feel secured. Their all round performances will be assessed yearly by the Principal and the special committee of the governing body. Their future contract and promotion will depend on the basis of this record. This will bring a newer attitude which will encourage and give

incentive to any individual to prepare him to be a better teacher, to aspire to be the head of the department one day.

With each college having the same standard facilities we shall soon see a new era in which there will be competition between the different colleges and the teachers to give a better training to their students. The medical education will leave the domain of no man's land to become the responsibility of colleges and its teachers. Once the standard facilities are available, and the teachers are selected on merit, at par with the same standard for all the colleges we would require a standard syllabus.

In this connection, it may be mentioned that recently the undergraduate medical council appointed a special syllabus committee. After threadbare discussions, considerable consideration of suggestions and opinions of the teachers in different subjects, a syllabus was formulated. This syllabus is based on the semesterised system of teaching for a four and a half years' degree course in medicine. The programme is time bound, itemised and standardised as per Medical Council of India to keep in conformity with the all India medical teaching pattern. The syllabus is not only semesterised but also 25% of the theoretical marks are adjusted from the internal assessment of the colleges at the end of each semester. As far as practicable it keeps a constant teaching project involving the teachers and the taught alike. The Principal should be responsible to implement and execute the teaching programme as postulated in the semesterised system.

A fresh thought is necessary for the system of admission. In our view, barring the weightage of backward tribes and castes, the admission should be on merit, on the result of the examination at the end of "+2" stage from the science stream of the biology group. The short-listed group must appear in a Selection Committee for an interview before a Committee comprising of the Director of medical education, all the Principals of the medical colleges and the peoples representing in the Assembly. Till further all round improvement and reconstruction of the medical colleges are possible a fresh thought to be given for reducing the yearly admissions of students from 150 to 100. We do not know what would be its political repercussion. As the conditions exist today, none of our medical colleges have facilities or personnel to teach even 100 students yearly and definitely no more. There must be suitable provision for hostel accommodation for the students as far as practicable our aim should be on residential teaching. It is an appalling state in which some of the so-called medical students' hostels are functioning. It is a great hardship for students coming from different parts of the province and wandering from door to door for an accommodation. The places which are apologies for hostels are at time not only insanitary and overcrowded but also are unsuitable for use as living purposes—but still there is a huge waiting list as the mofussil students cannot find any accommodation, to stay in the city.

The university should have a separate department for conduction of medical examinations.

The examination dates and the dates for publication of the results should be fixed—as a matter of fact, unless we keep to the schedule, the newly introduced semesterised teaching syllabus cannot be properly implemented. The examinations should be conducted in a business like manner with 50 per cent external examiners from outside the State as recommended by the Medical Council of India. The theoretical examinations should be held in a centre for all students with invigilation by the teachers from all colleges. The oral and the practical examinations must be held in an external centre conducted by external examiners and this should hold same also for the Bankura Sammilani Medical College students. In our view more than 80 per cent of the students are genuinely eager to study and are frustrated to see that the examinations are postponed or disrupted.

If the facilities are standardised and the syllabus is completed and semesterised working is implemented and the university examinations are properly held, the morale of the majority of the students will rise and a few disruptive elements could be easily sorted out. Moreover, in the past decade, disruption of a highly professional examination was possible as the disruptive elements got away with their methods in intimidating students, invigilators and examiners due to protection of politics of getting something in return.

In conclusion we would like to point out that the system of medical education in our State has come to the lowest standard. If this allowed to drift further the society will be deprived of reliable doctors' services in the very near future. This genuine problem can only be solved if the leadership really feels that a change is necessary. There should be complete reorientation of our attitude to medical education. It requires remodelling—the task is tremendous but not unsurmountable. □

The Relevance of Students Health Home in Today's Society

(Continued from page 519)

pattern of things and activities like the students' self-help. But our fractured vision may not necessarily mean that reality is also fragmented. In reality there is live unity.

Students Health Home provides a platform for different kinds of people with different ideologies to work towards a common goal. A radical restructuring of society is obviously not possible without political change, but the change that the Students Health Home is working for is, an endeavour in the same direction. The consciousness, the motivating force is common; the form is different.

Providing quality medical facilities to a large number of students is doubtless an important task. But even more important is the aspect of building a new social conscience. In spite of the physical limitations of its effort, an organisation like Students Health Home is a tentative step forward out of the social cobweb whose strands of primitive self-interest, entangles everybody. This is where basically the relevance of this institution lies. □

Education Through Open University

N. Guruswamy*

The education has changed from its primitive purpose of imparting knowledge for its own sake to a multi-purpose stage. Broadly speaking "education is a three fold process; it imparts knowledge, teaches skills both intellectual and physical and inculcates higher values or value". Another important change that has come over education over the years is that from a single medium, it has passed to a multi-media. While the governments educational policy clearly reflects these two changes, what has been neglected is the failure to view education from a pragmatic and integrated angle. The danger of importing foreign model to Indian conditions has been kept in view by the Governments though no concrete steps have been initiated in this direction. But what has remained awfully neglected is the failure to treat education as an organic whole. There is the dangerous tendency of treating different stages of the evolutionary processes as watertight compartments. The ultimate success of the pyramid depends on the strength of each. It is against this background that an attempt has been made to study what type of open university suits Indian conditions.

The Open University is defined as the University of the 'second chance', offering opportunities to those who had been deprived of them hitherto. Thus in Britain, this was an attempt to set right the balance of the educational opportunities. To Mohan Singh Mehta, the continuing education is the revival of this original social purpose and the efforts of the university to live aloof from the society. Contradicting the sociological foundation of education, it is argued by some that the university is inappropriate institution to try to redress social imbalance in educational opportunity. Initiated by Harold Wilson, the Open University known by different names such as the university of the 'second chance', 'University without walls' is said to be the political child of the labour Government. In U.K., this movement has taken deep roots and spread to other countries in different forms. India is at its initial stages of implementation. We can draw many lessons from the experiences of the other countries.

The case for an open university can be attributed to a few factors among them the dominant being, the belief that the education does not end when one earns a certificate and enters profession. The dominant definition equates education with what happens in schools and colleges and with the time people spend in these buildings. Education in this sense is assumed to stop at the school gates and to enter full time employment. Willburn J. Cohen further emphasises the importance of such process when he says that the

"scientific and technological explosion has caused us all to recognise that learning is a continuous, permanent, life-long pursuit. It is a process which commences with birth and only terminates at death and this carried on by others in a never ending continuum."

The open university should start with a new definition and a new purpose. It should move from the old idea of universality of disciplines to universality of people. Instead of the university identifying with a higher level of learning should feel that it is a leap sector in the educational sphere responsible for the development of all the lower sectors. A new thinking is necessary to treat education as a system where the success of the system depends on the even and steady growth of every organ.

The university claims to the "University of the second chance" and is trying to offer opportunities to those who have already had the first chance of higher education. It is criticised that if the aim of the open university equalise educational opportunities, it has to identify and provide those who have not had the opportunity of elementary education. The second chance theory may be alright when judged in the context of Britain. But it is meaningless in India where the 70% of the population constitute illiterates on whom depends the success or failure of the nation's progress. It, therefore, calls the educationists to think of a open university which can meet the requirements of the two categories of the population—those who are to be brought into the fold of literates and those who have attained some education but deprived of the chances of further education owing to various reasons. These two areas can be rightly considered as two complementary segments of the open university system, the final success depends on the development of both. The approach should be such that a person after attaining some level of education will be able to get into the higher level without much hinderance. Further there should exist a provision wherein persons will be able to join the regular institutions from the open university to the regular institutions and vice-versa.

A careful planning is necessary at each stage. Along with planning, co-ordination and good understanding among the different sections is also necessary. The open university should be divided into different stages corresponding to the institutions intended for regular students and the responsibility to the extent of each stage should be assigned to these institutions. The university should take the lead role of not only being held responsible for open education at a higher level but for the coordination of lower levels.

Problems of the present Open University

1. At present only conventional courses can be offered where there is a need for vocationally designed courses.
2. An upper age of 25 is stipulated denying the opportunities to these who intend to join the programme.
3. The media like T.V. & Radio are indispensable for the success of the programme. The T.V. in India has not made much progress. The Radio can

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be utilised better for this purpose. To make the programmes reach the students, a network of the community radio sets are to be installed at various points. At the organisational level a good understanding should be created between the broadcasting system and the open university agencies.

4. A very important but often neglected aspect of the open university programme is the importance of the libraries. This calls for not only strengthening the existing resources of the libraries attached to the educational institutions but building libraries in every part of the country. The neglect of the libraries can mar all the educational efforts. We are at the threshold of education where the dictum is 'learn to learn'. This assumes greater importance with reference to the adult educational programmes. The lack of follow up reading materials, Simoni Malya reports in Courier that each year over 60% of those adults who once knew to read relapse into illiteracy.

Suggested Lines of Action

1. The open university should be organised into two sectors—The adult education and the continuing education. The adult education programmes can be entrusted to the existing elementary schools. Following the line of thinking of Union Education Minister, Dr. Chunder, each teacher should take the responsibility of teaching 5 adults, which in course of a few years will lead to substantial results.
2. Handling of literates is a complex problem calling for not only special techniques of teaching but also needs the tact and specialised training because

of the fact that the students came from different social backgrounds. Therefore, it becomes necessary for special institutes, specialised in the methods of adult education, that teaching should be well organised. In a phased programme all the teachers involved in the adult education activity have to be trained in these special skills.

3. Money is the prime mover. The teachers may be given extra remuneration for the extra work but the remuneration should be commensurate with the work.
4. It is desirable that some kind of incentives should be provided to the participants.
5. A separate adult educational cell may be created under the district educational officer.
6. For organisation of the open university at higher levels, the existing resources of the colleges may be fully utilised. The corresponding courses also should be made popular. Care should be taken to see that these courses are moderately chequed. All the educational facilities and concessions now available to the regular students should be extended to those participating in the open university programmes. At this level the university can take the direct responsibility.
7. For the intermediate education, the responsibility can be entrusted to the junior colleges.

If the universal compulsory education becomes the responsibility and reality in course of time, the pressure on adult education programme will ease throwing the additional burden on continuing education. Further a lot of research should precede any programme as contemplated above. The university should take the lead role. □

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Role of Higher Education in National Development

Dr. P. C. Chunder, Union Minister of Education, Social Welfare and Culture in his convocation address of the Himachal Pradesh University emphasised the importance of the education for the masses. He said that it should be given the highest priority in educational reconstruction. At the same time in the all round reconstruction of education and national development, the importance of higher education and research should not be minimised. It is higher education that trains the high level personnel which we need and which provides the essential leadership in all walks of life. It is research which enables us to exploit our natural resources better and to manage our social affairs more efficiently.

He said that it is often asked why every person should have

the undergraduate and postgraduate stages, is about four per cent of the age-group. The Education Commission was of the view that it could rise to six per cent by 1986. Whether this target is reached or somewhat exceeded, there is no denying the fact that access to higher education in our country will be limited to a few for years to come.

In a situation of this type, the more important question is, not whether higher education should be for the few, but, who are the few persons that should have this limited access to higher education. If these were to come from the well-to-do classes of the society only (say the top 20 per cent of the people or so), and if access to higher education depends less upon the talent of the young man and more upon the length of his

for the few. This can be done and higher education can cease to be the almost exclusive preserve of the well-to-do if we provide access to it to talented children from all walks of life. We are doing this to some extent already through our schemes of scholarships for talented children and especially through the large scheme of post-matriculation scholarships for the scheduled castes and scheduled tribes. But for these schemes, the bright and talented persons from the weaker sections of the society would never have had access to higher education. What is needed, therefore, is a very large expansion of this programme. We must identify all talented children from all social strata as early as possible and this can easily be done if elementary education becomes universal. We should then strive to see that all talented children, irrespective of caste, social group, or sex, are helped to receive good secondary education through a programme of placement and scholarships and that all talented young persons who show their promise at the end of the secondary stage are also assisted to receive higher education by similar programmes of scholarships and placement. There is every justification for this because talent is a scarce commodity and a national asset; and as the Education Commission observed, every talented child from every social strata should be regarded as a ward of the State and should be provided with the best and highest education. This is also an act of social justice because it helps talented children from the poorer and weaker sections, who would otherwise have been ignored and wasted, to grow to their full potential.

The weaknesses of the present system of higher education can not be minimised, I am extremely conscious of them, and am aware of the fact that the standard of our higher education are far from satisfactory and that the quality of education, which is important at all stages, assumes supreme significance at the university stage. It is obviously useless, or even counter-productive, to expand a system of higher education which does not maintain adequate standards and I therefore agree with the view

CONVOCATION

access to some form of higher education in a "learning society" where life-long education for all is the objective of State policy. In some of the affluent countries of the West where even secondary education has been made universal by providing compulsory education of 10-12 years, higher education is becoming more common and is already available to about one-third to one-half of the young persons. But these cannot be the immediate goals of our policy. Our highest priority is and will continue to be to provide eight years of compulsory elementary education for all; and unless that is realized, even secondary education will continue to be for a few and higher education, for fewer still. At present, the total enrolment in higher education both at

father's purse, then the system of higher education does become elitist. No one can defend a situation of this type and I am also afraid that in the present educational structure where, out of every 100 children, only 25 complete elementary school and only 10 complete secondary education, the system of higher education is by and large elitist and about 80 per cent of the young persons receiving higher education come from the top 20 per cent of the population. While the charge of elitism levelled against this system is thus true. I do not share the view that we must therefore ignore or neglect or oppose higher education. In my opinion the correct policy should be to change the elitist character of our higher educational system, even when it is meant

that the priority in higher education should be given to programmes of qualitative improvement. This casts tremendous responsibilities on teachers, students, and the public leadership.

Teachers are the guardians of the 'quality' of education and have the greatest responsibility for maintaining standards. In spite of all the weaknesses of the existing system our teachers have been able to maintaining standards. They have also been able to maintain discipline and an atmosphere of scholarship and pursuit of knowledge around them. However, unless there are many more such teachers, it will not be possible to raise standards in higher education. I would therefore appeal to the teachers in higher education to recognise their responsibility for developing their own professional competence and for doing all they can to promote the competence of the students entrusted to their care.

The students have an equally great responsibility for the maintenance of standards. After all is said and done, standards in education basically depend upon two things: the motivation of students and their willingness to work hard. In the past, for a variety of socio-economic reasons, the motivation of students was very strong and that alone was enough to guarantee a proper maintenance of standards in spite of several handicaps. It is unfortunate that this motivation has somewhat deteriorated in recent years and this is probably a major factor that has led to some deterioration of standards. We will therefore have to see that student motivation is greatly improved in the years ahead. Similarly, we must remember that education is essentially a stretching process and that a student in higher education is expected to work 60 to 80 hours a week throughout the year if standards are to be maintained and if we are to get adequate return for the heavy investment we make therein. This rarely happens in our system at present and a large proportion of our students concentrate on examination guides or likely questions, and study intensively only for a short period before the

annual examination. These conditions will have to be substantially changed and a sustained climate of hard work and dedication created in all our institutions of higher education if we desire to raise standards. In both these matters—improving motivation and working hard—the prime responsibility rests on students and they will have to heel themselves to help the nation to grow and prosper.

No less is the responsibility that lies upon public leadership in all walks of life, and especially on the political leadership. It is their responsibility to see that the university system functions smoothly and that the teachers and students are enabled to pursue their studies in peace. It is unfortunate that our university campuses have been very frequently disturbed, that incidents which are unworthy of an academic life often take place in them, and that disquiet and unruly behaviour have become so frequent and endemic in some places as to make regular academic life almost impossible. Such a situation cannot be allowed to go on because it is the very negation of education and a waste of the large investment we make in the system. What we need is a creative peace on the campus, a peace that reflects the purposive involvement of student and teachers in pursuits of abiding value and significance. Such a peace can come only if teachers and students rise to their responsibilities, if they eschew violence and unacademic ways of life, and if they are determined to solve all problems that arise through mutual discussions and through a process of give and take.

Referring to the role of science and technology, Dr. Chunder said that science is the basic force that will help us to modernize our society by dispelling fear, irrational superstition, blind fatalism, and uncritical approaches to personal or social life. Similarly, it is technology, the appropriate technology suited to our needs, conditions and aspirations, and based on the highest development of science, that will help us to increase production, to abolish poverty, to improve health, to spread universal education, to

create a learning society, and to provide full access to all for cultural growth. It is true that we are not seeking to create the consumption-oriented Western society which wastes scarce resources and imperils the very future of man. But even in the Gandhian society we will need science and technology, both of an infinitely higher and better order. I would therefore give the emphasis on promotion of science and technology in all our education system, and especially at the university stage.

Science and technology are a force: and like all forces, double-edged and capable of misuse. It is therefore necessary to blend them with the moral and spiritual values in which our tradition is rich. To me, the hall-mark of an Indian intellectual, who is the product of the university system, is not only his scholarship, his rational and scientific temper, or even his commitment to the pursuit of truth and excellence. To me, the equally significant hall-mark of an intellectual is his compassion, his commitment to man, his dedication to serve the people of this country, to abolish poverty, ignorance and ill health from its territory, to assure a decent standard of living for all, and, in the words of Gandhiji, to wipe every tear from every eye. I should judge a person as an 'elite', not so much on the basis of his social origin, as on the basis of his value system and his actions. If one loves his fellowmen and dedicates his life to the abolition of privilege and to the service of the less fortunate, he is not a member of the elite classes, irrespective of the social group in which he may be born. I therefore look upon the system of higher education as one which will provide access to all talent, irrespective of its social origin, and as one which will send out every student as a servant of the masses, rather than as an exploiter. This can be done if the system of higher education is transformed on the basis of our spiritual and moral values of compassion, non-attachment, non-violence, and service which Gandhiji so strongly and consistently advocated.

Working of Semesters in Karnataka

(From Our Special Correspondent)

The semester system continues to agitate the students in Karnataka. The decision of the authorities of Bangalore, Mysore and Karnatak Universities to review the working of the system and to grant some concessions has not in any way satisfied the students who want its abolition.

The new Vice-Chancellor of Bangalore University, Mr. T.R. Jayaraman, has issued orders modifying the semester system governing B.A., B.Sc., B.Com. and L.L.B. courses. For the academic year 1977-88, according to the amended scheme, there will be only one university examination at the end of the second semester consisting of six papers. The question papers will cover the syllabus taught in both first and second semesters and will be of

The Bangalore University Students' Action Committee is not satisfied with the decision of the authorities. It has again decided to launch an indefinite agitation for the total abolition of the semester system. The first agitation launched two months ago was suspended after a week-long violence and the resignation of the Vice-Chancellor, Dr. H. Narasimhaiah. The committee says the modified system, by which the examination would be held at the end of the second semester, is "impractical and vague". It has urged the Vice-Chancellor to scrap the modified system and introduce the method of teaching which prevailed earlier to the semester system.

The abolition of the semester system has also been demanded by

has made it clear that the option is being given to the students and not to the colleges.

Dr. Hiremath said that the change in policy on semester was made after a round of meetings he had with members of the teaching staff and the review committee appointed by the university to elicit the opinion of students on the system. The feeling among the students, he pointed out, was running high and they did not seem to be in a mood to listen. A decision on the continuance of the semester system could be taken after the tempers had cooled down.

Meanwhile, the review committee of the university under the chairmanship of the vice-chancellor will continue to elicit opinion of students. Workshops are proposed to be held to enlighten students and teachers on the various aspects of the semester system.

The Vice-Chancellor said that the university would prevail upon the University Grants Commission to make liberal grants to strengthen libraries in colleges with a view to catering to the requirements of the semester system. He would get in touch with the Karnataka Government on framing rules on the staff pattern in colleges in tune with the requirements of the semester system.

Already students of Hubli and Dharwar have told the review committee that the university should not impose the semester system on them. Many students have expressed their fear that they may not get a fair deal from teachers who would be entrusted with internal assessment.

Delhi decides to institute M.Phil

The Academic Council of Delhi University recently approved the courses in Physics and Botany for the M.Phil programme. After these have been approved by the Executive Council, the courses will be organised for the next session. The Academic Council also approved the proposal of starting the part-time course in Bachelor of Education in the Central Institute of Education. This course will benefit the teachers

CAMPUS NEWS

three hours' duration each. Each paper will carry 200 marks for subjects without practicals. In respect of subjects which have practicals, the theory paper will be for 180 marks and practicals 20 marks. There will be no separate internal assessment marks.

The university has clarified that this is only an ad hoc arrangement pending consideration of the entire issue by the Academic Council which is being convened shortly. This working arrangement has been made only to facilitate smooth conduct of classes and teaching during the first semester. After the Academic Council meets, the actual number of marks for the final examinations as decided by it will be enforced.

the Karnataka unit of the Akhil Bharatiya Vidyarthi Parishad. In a memorandum given to the Vice-Chancellor of Bangalore University, the Parishad says that the semester system was introduced arbitrarily and without adequate preparation. It wanted the university to appoint a committee consisting of teachers, educationists and others to review the system.

In Karnatak University, the Vice-Chancellor, Dr. R.C. Hiremath, has announced that the semester system introduced at the undergraduate level will be made optional. This concession is only for this year and the students have been asked to indicate their preference, either the semester or non-semester pattern of education, immediately. The Vice-Chancellor

who are already in employment and need to have this degree for their further promotions. The date for the commencement of the course will be announced by the authorities shortly. The Council also decided to revive an old scheme of providing scholarship to the postgraduate medical students and decided that the University Grants Commission be requested to release a grant of Rs 96,000 as was done in previous years. If the grant is sanctioned by the Commission the postgraduate medical students of the Patel Chest Institute would be benefited in a big way. The university will also continue its dialogue with the Ministry of Health for the recognition of the postgraduate students of the Patel Chest Institute under the residency scheme which would give them better benefits. The Council also decided to institute two public lectures—one on physical sciences, earth sciences and mathematics, and the other on life sciences, anthropology and psychology. An expenditure of Rs 5,000 was approved for this purpose.

Archaeological museum for Garhwal

The University of Garhwal would soon set up an archaeological museum in the university. A preliminary grant of Rs. 35,000 has been provided for this purpose in the current financial year.

Hyderabad institute of wild life

The Central Government has accorded sanction for setting up of a training institute for crocodiles rearing—the first of its kind in the country—at Hyderabad with sufficient financial aid from the United Nations Development Programme. Under the programme, fifteen trainees would be taken from all over the country. Extensive course in crocodile rearing would be conducted. The Advisor to the Food and Agricultural Organisation, Mr D.V. Devos, visited Hyderabad to study the setting up of the All India Institute on Wild Life with assistance from UNDP. He was impressed from the infrastructural

facilities available. The Andhra Government has also provided special site adjoining Nehru Zoological Park for this purpose. The institute would be the first of its kind in Asia.

Temporary teachers in Bihar to be confirmed

A meeting of the Vice-Chancellors of the Universities of Bihar was held in Patna. It was recommended that all temporary teachers who had completed two years of service on the 30th June, 1977, should be confirmed and their cases need not be referred to the Service Commission and individual universities. But the concurrence of these two bodies should be obtained separately. It was also suggested that the university statutes be amended accordingly. The meeting further resolved that constitution of the senates should be completed in different universities by 30th of this month and that of syndicates by the middle of October. The meeting was convened by Dr. Sudharshan Prasad Sinha, Deputy Chairman, Inter-University Board of Bihar.

Research scholars in the universities have however voiced their demand that all teaching appointments should be made from amongst those who successfully face the Public Service Commission or the University Service Commission. In a meeting held under the presidentship of Mr. Arvind Kumar Sinha the research scholars felt that it would be a gross injustice to meritorious students if persons with lesser merit bypassed them in securing jobs of lecturers in colleges and universities.

Job bureaus for Karnataka Varsities

Mr. Govind Narain, Chancellor of Karnatak University, said in Dharwar that every university should start an employment information office to keep the students informed of employment opportunities all over the country. He was declaring open the Central Library building in the Karnatak College in Dharwar. The Chancellor suggested that the teachers

should start a voluntary service to help students choose subjects for higher studies according to their aptitude and inclination. He said the needs, aspirations and difficulties of the teachers should be given the highest priority by the Government and assured the faculty that he would be happy to remove the grievances of the teachers and the students at all times.

Students in Delhi Academic Council

Four students were elected as members of the Academic Council of Delhi University. They are: Mr. Pradeep Singh Puri, an MA (History) student of Hindu College and Mr. Amarendra Sinha, MA (Political Science) student of Kirori Mal College. The two undergraduate students are: Mr. Shishir Sinha and Mr. Bharat Bhusan.

UGC invites nominations for awards

The University Grants Commission has invited nominations for the following five Hari Om Ashram Trust Awards for the year 1976 from the universities and heads of other teaching or research institutions in the country: 1. Shri C.V. Raman Award for experimental research in physical sciences. 2. Dr. Homi J. Bhabha Award for research in applied sciences. 3. Dr. Meghnad Saha Award for research in theoretical sciences. 4. Sir Jagdish Chandra Bose Award for research in life sciences. 5. Award for contribution in the field of 'Interaction between science including technology and society'.

For these awards contributions by individual scientist or team of workers will be considered. But the work should have been carried out in India. The award will be for outstanding scientific work which has made an important contribution to human knowledge in the specified field. The prize could be shared by two or more persons whose work is of equal merit. The work will cover books, monographs, papers or any other published account of research work, inventions, discoveries etc. which have not already received a

similar award from any other agency.

Delhi M.A. in Tamil

The University Grants Commission has permitted the University of Delhi to institute M.A. Course in Tamil in the Department of Modern Indian Languages. The programme would be started from the next academic session.

Priority refixed for P.G. courses

The Karnataka Government has decided to remove the preference given to government doctors in admissions to postgraduate medical courses which they had hitherto enjoyed. Out of the 303 seats in postgraduate medical courses, 158 were to be reserved to in-service doctors and the remaining 145 to others including private doctors. The Government has now decided to determine from the next year onwards the number of doctors it would have to train at the time of the selection of the postgraduate medical admissions and after earmarking those seats, throw open the rest to all people of the State in conformity with the Indian Medical Council and the university regulations.

Mitra's plea for need-based education

Dr S.K. Mitra, Director of the National Council of Educational Research and Training has made a plea for relating education with the socio-economic needs and the life style of people. He regretted that the primary schools, by and large, continued to provide traditional type of education. The changing socio-economic and cultural needs of the country are hardly reflected in the curriculum that operates in the vast majority of schools in our rural and remote areas.

Dr. Mitra was inaugurating a 3-day conference convened to review the progress of the UNICEF assisted projects on the need-based primary and community education, launched in fifteen States in the country. The pro-

jects relate to the programmes of curriculum renewal for the weaker section and establishing a close relationship between the school and the community. Dr. Mitra said that in spite of prolonged efforts, the country has not succeeded in bringing cent per cent children in the age group of 6-11 years into the field of primary education. He also referred to the alarming rate of wastage and stagnation at the primary stage. The rate of drop-out up to class five was roughly 60 per cent. In some of the tribal areas, the rate of wastage and stagnation was as high as 92 per cent.

Commonwealth youth centre at Chandigarh

The Chandigarh youth development centre has been functioning for quite some time at Chandigarh. It was established by the Commonwealth Secretariat under the Commonwealth Youth Programme to train key personnel like administrators, organisers and trainers connected with youth welfare and development in the countries of Asia-Pacific region. Two such other centres have been established by the Commonwealth Secretariat. One is located at Lusaka in Zambia and other at Georgetown in Guayana.

Mr. V.R. Reddy, Additional Apprenticeship Adviser to the Government of India in the Ministry of Education has taken over recently as its Director. A new basic course has been designed to provide for institutional training and practical work at the centre. The programmes and courses offered are action-oriented and responsive to the needs of the community. The course will be started in the middle of October and would be attended by forty participants from India, Bangladesh, Sri Lanka, Malaysia, Singapore, Fiji, Australia, New Zealand, Hong Kong and some other commonwealth countries.

Third summer institute for librarians

A summer institute for college librarians was organised at Sri Venkateswara University Library, Tirupati recently. This was the

third summer institute sponsored by the University Grants Commission in the field of library science. The earlier ones were conducted by the Delhi University and Karnatak University respectively. As many as 30 librarians from the degree colleges and 20 college librarians attended the institute from privately owned colleges. Prof. Kumbhar of Karnatak University, Dharwar and Prof. P.B. Mangla, Professor of Library Science, Delhi University were the guest speakers. Besides lecturers, group discussions were also organised and the participants were familiarised with the procedures of the library and organisation.

The main topics of discussion were the nature of interpretation of fundamental ideas, principles and practices in light of increasing importance of the library service and current techniques developed in the field. It was more a sort of re-evaluation and re-orientation of the fundamental ideas and exposing the participants to the developments of the latest techniques taking place in the field. Different aspects on book acquisitions, classification and cataloguing, public relations, documentation were discussed. Visits were arranged to the local college and district libraries to acquaint the participants with the working of these institutes.

Delhi to hold paediatrics congress

About 4,000 delegates would be attending the 15th International Congress of Paediatrics to be held in New Delhi from October 23. Dr. O.P. Ghai, Head of the Paediatrics Department, All-India Institute of Medical Sciences is the Secretary-General of the Congress. Five plenary sessions will be held during the 7-day Congress on perspective in paediatrics, malnutrition, diabetes and advances in child care. About 82 symposia have been planned on all aspects of child health in which 350 papers will be presented. There would be about 2,000 delegates and 1,000 observers besides 700 delegates from all over the country. About 250 distinguished scientists have been invited to attend the Congress including a Noble laureate

Dr. Fedric C. Robbins of the USA, Dr. Spidas (USA), Dr. Baum (UK), Dr. Jeuseon (W. Germany), Dr. Paul Malvaux (Belgium), Dr. J. Money (USA) and Dr. Prader (Zurich) and Dr. Klauz Betke (W. Germany).

West Bengal for correspondence courses

The West Bengal Government is considering a proposal to introduce correspondence courses for higher education in the different universities in the state for the benefit of a large number of students who could not be admitted into the regular classes for various reasons. The Government would also make efforts to bring about a healthy and democratic atmosphere in the education system and rouse consciousness among the common people. In the field of collegiate and technical education the Government is trying to improve the existing facilities rather than going in for further expansion. Fourteen private colleges which had secured affiliation during 1971-74 period on an undertaking that the Government would not be approached for any financial assistance in a specified period had been brought under the grant-in-aid scheme applicable to non-sponsored colleges.

Mr. Sambhu Ghosh, the West Bengal Education Minister, has made a provision for incurring expenditure of Rs. 149.3 crores during the current year. He wants to make education upto standard VI free which would benefit an estimated 4,00,000 children between the age group of 11-14 years. During the year about 1,000 more primary schools, with four teachers each, would be set up mainly in areas which had done, so that 86.9 per cent of the children between the 6-11 age groups could also be covered under this scheme.

Students benefited from vacation projects

The vacation literacy project launched by the college students in Tamilnadu during summer this year benefited more than six thousand adults in nineteen hundred villages. The response from the students was encouraging and

the record of achievements was very promising. The Director of Collegiate Education has urged the Principals of colleges during the vacation to contact vacationing students and suggest to them taking up the vacation literacy project under which each student would teach at least one illiterate person. The report received from the various colleges on the implementation of the project indicated that not only did the students find it possible to make a good beginning but were also able to derive satisfaction of having done something worthwhile during the summer vacation. The students established contacts with persons serving as helpers in homes, labourers and neighbours and taught them to read and write. They also taught them fundamental arithmetic, like addition and subtraction, and how to send and receive money orders and write letters. The students felt encouraged to continue the campaign during the coming summer vacation also. Some students had also met the expenditure of travelling and cost of stationary. The literacy drive was a novel experiment and many principals and participants had expressed the view that the drive should continue hereafter as an annual feature.

U.N science meet to be held in India during 1979

The United Nations will hold an international conference on science and technology to bring greater exchange of technology between nations and help accelerate the process of economic and social development. The conference would be held in 1979. A key element of the conference will be the presentation of national papers by representatives of participating countries. Many countries have established high level inter-ministerial committees for the preparation of the national papers. The conference secretariat will provide technical advisers to those countries, which require them for the preparation of national papers.

Dr. V.J. Ram, Principal Adviser to the Secretary-General of the

conference, paid a visit to India and discussed with Indian representatives the preparation for conference. He held discussions with Dr. A. Ramachandran, Secretary to the Department of Science and Technology, who will be in charge of the Indian preparations for the conference. The conference would draw on recommendations made earlier in specialised conference like the Stockholm Conference on Environment, the UN Water Conference and the UN Desertification Conference. The conference is likely to lead to the establishment of a specialised UN body for science and technology with funds for implementation of a global plan of action.

Nehru Literacy Award

The 1977 Nehru Literacy Award has been given to Mr. A.B. Deshpande, former adviser on social education to the Government of India, for promotion of literacy and social education in the country. The other recipients of this award have been—Dr. Welthy Fisher, Mrs. Durgabai Deshmukh and Mr. Avinasalingam Chettiar. The award was instituted in 1968 by the Indian Adult Education Association.

Mr. Deshpande started a mass education society in Amravati, Maharashtra in 1925. He formulated a massive scheme of social and adult education in 1948. He gave social education a form and content as part of the community development project and served as Director of the National Fundamental Education Centre from 1957 to 1960.

Revised pattern of rural studies

The South Gujarat University has started a new Master's course in Rural Studies under its Faculty of Rural Studies. The new course aims at training advanced level workers for various types of rural development activities. Students are given both theoretical and practical training in various disciplines of rural life so that they are able to undertake responsible work in their respective

areas. The experience of last six years of this new course, is highly encouraging in so far as most of the students with M.R.S. degree having received gainful employment in one or the other organisation in the backward areas. Under the revised programme the first year of the course will be devoted to teaching of basic disciplines and the students would be encouraged to offer advanced courses in rural problems, resource development, research, extension, rural finance and rural industries and trade. There is a provision for project work also. The student can be seconded to other agencies for apprenticeship experience. The Department has also planned extra-mural extension activities and case studies.

Bio-sciences department inaugurated in Surat

The University Grants Commission has accepted the proposal of the University of South Gujarat to develop the existing Postgraduate Department of Botany into a Postgraduate Department of Bio-sciences. Dr. D. Sankar Narayan, Additional Secretary, University Grants Commission while inaugurating the department and M.Sc. course in Life Science said that for all sided development there was an urgent need for inter-disciplinary growth of biological sciences in the country. He advised the university not to encourage a rigid set up of Bioscience courses. He advised the students to act as watch dogs over the weak points of the courses and asked them to bring them to the notice of the authorities in a most constructive manner.

Prof. R.D. Patel, Vice-Chancellor of the university thanked the UGC for sanctioning grants for the department under the fifth plan period.

P.G. courses at Kakinada and Kurnool

Mr. M.V. Krishna Rao, Minister for Education, Andhra Pradesh, announced in Hyderabad that the State Government would soon

start postgraduate courses at Nuzvid, Kakinada and Srikakulam in Andhra University area and at Kurnool and Cuddapah in the Sri Venkateswara University area. He made this announcement while inaugurating state level conference of the Principals of degree colleges. Mr. Rao said that already nine postgraduate centres had been established and by setting up more centres the weaker sections of rural areas would be provided with better facilities to pursue education upto postgraduate level nearer their homes. Referring to the standard of education in Andhra Pradesh he said that the percentage of failure was high in colleges. Even in All India competitive examinations, a few students from Andhra Pradesh had passed. Efforts were therefore required to be made to improve the quality of teaching so that a sizeable number from Andhra Pradesh join the All-India Services. He wanted special attention to be focussed on students coming from backward sections, who are slow learners. Extra coaching classes should be organised to help improve their standards. The Minister advised the Principals not to deal only with academic and administrative problems but also the human problems of students.

P.G. course in science education

The Regional College of Education, Bhopal is instituting postgraduate courses in science education with effect from the current academic session. To start with, the College has invited applications for admission to M.Sc. (Ed) course in Physics which will be an integrated course in teacher education with content equivalent to Master's Degree level in Physics and an orientation to research methodology and pedagogy. These courses are a major breakthrough in the teacher education programmes and are in accordance with the recommendations of the Kothari Commission. This new course will meet the professional needs of qualified science teachers who will be teaching physics in the new pattern of education. Similar courses already exist at the Regional

College of Education, Mysore. The candidates, after completing the course, will be competent for appointment as P.G.T.'s at the plus two level and also in teacher education institutions/research institutions/organisations in various capacities. The course will be of two years' duration with reduced vacation.

Relevance of system approach in education

Professor S. Ramani, Head of the Department of Humanities and Social Sciences, Indian Institute of Technology, Madras stressed the need for imparting system thinking even at the secondary school stage while participating in a seminar on Institutional Planning and Management, organised by the State Council of Educational Research and Training. Prof. Ramani said that there is a great need for formal training in the use of the system approach for educational planning. There was need for a total approach to solve the problems of educational technology. He said that every Headmaster or Headmistress was a manager in his or her own right. Hence the need for formal training. The pitfalls into which many manager fell, sometimes unwittingly, were many. Very often they took a narrow view of the problems. This resulted in sub-optimisation of the system. The system approach would overcome this shortcoming.

Dr. Anand W.P. Guruge, Education Management Adviser, UNESCO Regional Office for Education in Asia, Bangkok, said that the problems peculiar to this region had been identified and attempts were being made to solve them satisfactorily.

Library & information science education in India

An all-India seminar on Library and Information Science in India is being organised by the Department of Library Science, University of Delhi in the first week of October. The participants to the

seminar will include Heads of Departments of Library Science, teachers of library science, eminent librarians and information scientists in the country.

P.M.'s plea for regional languages as media of instruction

Mr. Morarji Desai, the Prime Minister of India, while speaking at the opening of the newly constructed buildings of Kerala Agricultural University, Trichur emphasised the need for admitting more young students for agricultural courses in colleges so that the knowledge they gained from education could be put to practical use for improving farm production. The scientific knowledge of agriculture gained by such young peasant students should help them produce more food-grains and that, too, at reduced cost. Mr. Desai said that the medium of instruction in agricultural universities had to be the regional language. To facilitate this, all the languages had to develop and become vehicles for imparting scientific knowledge. He said that agricultural universities should not merely produce graduates, who went after jobs and better remuneration, but must see to it that agriculturists made use of the trained personnel. For this purpose, more peasants should be admitted for courses in agriculture by these universities. All this is necessary as the agriculture was the basic foundation of the country and unless and until agriculture is enriched and every peasant produces the maximum, the country can never progress and become prosperous. Industries, of course, were necessary, but small and cottage industries had to be given more thrust because they provide more employment opportunities. The Prime Minister regretted that enough attention has not been given to agriculture so far. The country had learnt by experience that they should have proper priorities.

Tamilnadu library association holds seminar at Trichy

A seminar on Inter-Library Cooperation was held at Trichy recently.

Librarians from Madurai, Coimbatore, Krishnagiri, Salem, Tanjore and Pudukkottai districts attended it. Mr. Kasirajan was the Director of the seminar. The various aspects of inter-library cooperation were discussed. It was suggested that the district may be taken as a unit for the purpose of inter-library cooperation. The Government should also enlist the services of the librarians and the library associations in the programme of adult education, non-formal education projects. To make inter-library cooperation successful, the University Grants Commission, the universities, the public library systems, the State Government and the Central Government should jointly evolve suitable norms. Suggestions were also made to include library initiation classes for the junior students in the college curriculum and provision should also be made for offering library science as a subject under foundation course as well as an ancillary subject at the degree level. The Government was requested to evolve a standard staff pattern for college libraries and should give the status of teaching staff to the librarians. The desirability of having trained library staff for polytechnics and library education institutions was also stressed.

Special grant for Botany Deptt. of Patna Varsity

The Botany Department of Patna University has been selected under the special assistance programme of the University Grants Commission for the development of a school of cyto-genetics and plant breeding. Dr. R.P. Roy, Jawaharlal Nehru Fellow and one of the leading Botanists of India has been appointed Director of the advance centre. The assistance provided by the Commission to the university would allow the department to expand its activities in diversified fields of genetics with the application of modern methodology on which initiation has already been made. The principal research areas would be on cucurbits including polyploidy, hybridisation and sex expression. In addition to cucurbits the researches on grasses, legumes and

ferns would also be pursued with keen interest.

The department has received a sum of Rs. 6.25 lakh and non-recurring grant from the University Grants Commission. The grants include Rupees two lakh for equipment, Rs. 1.5 lakh for extension laboratory, and Rupee one lakh for books. Besides the department has been sanctioned one post of professor and two posts of readers to promote work in special areas of study and multi-disciplinary courses.

Travelling U.G.C. fellowships

The University Grants Commission will create travelling fellowships, special visiting professorships and associateships for creative artists and writers. A committee has been set up to work out the details of this scheme. University Grants Commission will build platforms of activity like exhibitions, cultural festivals, seminars; art-drama-music dance writing workshops and other kinds of group-interconnection projects. These activities, should involve creative artists and writers, both within and outside the university system.

The Commission has decided that the scheme for visiting fellowships and professorship should be extended to cover creative artists and writers to enable them to work at university centres for a period of three months to one year. About twenty such fellowships and professorships could be available in selected centres. Similarly about twenty national associateships should be made available at a time to university academics or outside artists and experts to work at selected university centres.

The national associates will be selected by the University Grants Commission while visiting fellows and professors will be chosen by the university centres themselves, though in consultation with the University Grants Commission.

New cancer cure gadgets

Linear accelerator will be installed at the All-India Institute of

Medical Sciences, New Delhi and at the Cancer Research Institute, Bombay each costing about 80 lakh rupees,

The usual radiation treatment at present available in Indian hospitals is that of cobalt therapy. Radioactive cobalt emits gamma rays which destroy cancerous cells. But the charged particle radiation from the Linear accelerator is said to be more suitable than Gamma rays for treating small localised lesions as accelerator produces a beam of charged particle radiation, such as protons. This method of radiation therapy for cancer patients is now being extensively used abroad. Since the range of Protons in human tissue is accurately known they can be aimed like missiles and made to stop right at the site of Cancer, something not possible with Gamma rays. Charged particles lose most of their energy in the last portion of their journey. Hence the effects of their radiation will be felt by the Cancer cells and only very slightly by other healthy cells on the path of the radiation beam. In effect, the equipment is a miniature atom-smasher used the world over in Nuclear Physics research. While Protons of many million volts energy are produced for Nuclear research, machines used for Cancer treatment accelerate particles to an energy of a few hundred thousand volts. It is called Linear Accelerator because the charged particles are accelerated in a circular machine such as a Cyclotron where the protons move in circles of expanding radius.

While Gamma radiation is the oldest tool in Cancer Therapy, medical scientists in the last fifteen years had been studying the usefulness of other Nuclear particles such as Neutrons, Protons, 'muons' and 'pions'. The last two particles available only from very high energy accelerators, are said to have great potential for Cancer cure. They can be aimed with precision at the cancer site of a millimeter in size. And once they stop inside the target, they produce Mini-Nuclear explosions. The resulting radiation fall out destroys the Cancer cells.

Seminar on responsibilities of teachers

The Punjab Agricultural University Teachers' Association organised a seminar on "Responsibilities of a teacher towards his students". Dr. Amrik Singh Cheema, Vice-Chancellor in his address stressed the importance of teachers as the builders of the nation and pleaded that all respect should be given to them in the society. He said that the teachers should inculcate a sense of dedication and devotion and love for more learning. Regarding the representation of teachers on various decision-making bodies of university, Dr. Cheema said that the University Act was being suitably amended to provide adequate representation to senior faculty members in university decision-making bodies.

Dr. G.S. Sekhon of the College of Agriculture said that the conduct of teachers should be above board. The teachers should not foresake the necessities of the students and their problems should be solved by the teachers through mutual understanding. Dr. R.K. Srivastva of the College of Agricultural Engineering said that the students should be treated like friends. The teachers should not try to intimidate the students. This would create disrespect for the teachers among the students. Personal contacts and social get-together also help to promote the mutual understanding between the teachers and the students. National Service Scheme had proved very beneficial for the students as such activities add to their practical knowledge. Professor Hazara Singh of the College of Basic Science and Humanities said that the teachers should work without any fear from his superiors. They should themselves act upon their preachings and judge their students objectively. There was also a need to change the grading system. Dr. P.N. Verman of the College of Veterinary Science said that the teachers would be failing in their duties if they could not make their students successful and responsible citizens.

Mr. Shinderjit Singh, President of the PAUTA said that the teachers should not take part in politics. They should apprise their students of the latest political situation of the country so that they could not be misled at any time by the influence of political parties. Mr. Singh demanded that fair representation should be given to the teachers on the decision-making bodies of the university.

C.S.J.A.'s sports scholarships

Three annual sports scholarships worth Rs. 2,400 have been instituted by the Chandigarh Sports Journalists' Association. Mr. Arun Rai Malhotra, former Delhi State Table Tennis champion, announced the award of a scholarship of Rs. 1200. Mr. Amarjit Singh, the renowned athlete, announced another scholarship of Rs 600. The selection of talented boys and girls for these scholarships will be made on the recommendation of a committee to be constituted by the Association. The scholarships could be further extended in case of those making satisfactory progress.

Re-evaluation cell established in Amritsar

Guru Nanak Dev University has introduced the system of re-evaluation of answer books of those wanting their papers to be reassessed in view of their suspicions about the erratic scrutiny by the original examiners. As many as 1600 applications for re-evaluation of their papers have been received this year. The re-evaluation will be conducted by two new examiners from other universities and errors will be rectified accordingly. The university has established a re-evaluation cell for this purpose.

Panjab holds students' council elections peacefully

In pursuance of democratization of the functioning of students' bodies on the campus, the Panjab University authorities decided to hold an opinion poll to decide whether indirect elections to the

Students' Council should be replaced by direct elections. Accordingly, the poll was held on August 19. The results were in favour of direct elections. Votes in favour of direct elections were 1,388 and votes against were 814.

The elections on the campus were completely free from tension, slogans or rowdyism. The campaigns were clean and strictly according to a 14-point code of ethics earlier enunciated by the Dean of Student Welfare.

On September 2 elections to the Students' Council were held. The following were elected office bearers: President: Mr. Bhupinder Paul Singh Khosa (Laws Department), Vice-President: Mr. Anupam Gupta (Laws Deptt.); Secretary: Mr. Jagdip Singh (Psychology Deptt.); Jt. Secretary: Mr. Sushil Mehta (Microbiology Deptt.).

Science academy awards for fourteen scientists

The Council of Indian National Science Academy has announced the medals and awards for 1977 for young scientists. The award includes a cash prize of Rs. 1500 and a research grant of Rs. 5,000 each from the Kothari Scientific and Research Institute, Calcutta to enable the selected scientists to pursue research in their respective fields of specialisation. The presentation of the award will be made at the anniversary general meeting of the Academy during the 65th session of the Indian Science Congress being held in Gujarat University, Ahmedabad in January 1978. The following is the list of the scientists selected for awards: Dr. Ateeq Ahmad, Central Drug Research Institute, Lucknow; Dr. P. Balaram, Indian Institute of Science, Bangalore; Dr. Asha Chandola, Banaras Hindu University; Dr. S.K. Dattagupta, Reactor, Research Centre, Kalpakkam; Dr. S.K. Dubey, All-India Institute of Medical Sciences, New Delhi; Mrs. V.P. Joshi, Bhabha Atomic Research Centre, Bombay; Dr. S.C. Kak, Indian Institute of Technology, New Delhi; Dr. A.S. Raghavendra, Sri Venkateswara University, Tirupati;

Dr. R. K. S. Rathore, Indian Institute of Technology, Kanpur; Dr. N. M. Singhi, Tata Institute of Fundamental Research, Bombay; Dr. H. Singhal, University of Roorkee; Mr. A. K. Suri, Bhabha Atomic Research Centre, Bombay, Dr. R. C. Sobti, Panjab University, Chandigarh; and Mr. Vijai Kumar, Bhabha Atomic Research Centre, Modular Laboratory, Bombay.

Bihar abolishes posts of PVCs

The Bihar Government has promulgated two ordinances bringing out changes in the governance of six universities in Bihar. These ordinances contain a provision according to which Lalit Narayan Mithila University of Darbhanga will henceforth be known as Mithila University.

Another important change brought through the ordinances is the removal of the post of Pro-Vice-Chancellors in all the six universities. A senior teacher will henceforth look after the duties of a vice-chancellor in his absence.

It may be recalled that the decision to set up a university at Darbhanga was taken in August 1972. It was then named as Mithila University and some colleges affiliated to Bihar and Bhagalpur universities and situated in Purnea, Saharsa and four other districts of Darbhanga division were transferred to the new university which came into existence through an ordinance. Subsequent to the tragic death of Shri L.N. Mishra towards the end of January 1975 to commemorate the services done by him for the north Bihar region, the university was renamed after him.

The present government has found that the Pro-Vice-Chancellors in the state universities were providing a sort of dual administrative system in these universities and hence these posts were not much required.

The ordinances also provide for the posting of I.A.S. officers in these universities

as Registrars. Uptil now the registrars were to be appointed by the Bihar Service Commission and these posts were transferable. The ordinances also provide for election of teacher-members of Patna University Syndicate by only those senators who are teachers. All those members of the Syndicates who are not senators can now be made ex-officio members of Senate by the Chancellor. The ordinances have also brought some relief to teachers who were detained or arrested during the emergency. They will now be deemed to have been automatically reinstated and their break in service will be condoned.

Madras approves new courses

The Madras University has decided to allow science graduate teachers to appear privately for postgraduate examinations under certain conditions. This facility will be available from the next year. The university has been eager for quite some time to open the avenues for postgraduate studies for science teachers. They will now have an opportunity to do so. The university will also have a part-time postgraduate diploma course in Maintenance Management, a certificate course in store keeping, a course on practice and procedures relating to law of customs and central excise and commercial taxes and diploma course in rubber technology.

AIU to meet at Rajkot

The 53rd annual meeting of the Association of Indian Universities will be held at Saurashtra University, Rajkot from January 14-16, 1978.

Calcutta holds Symposium on Nuclear Physics

(From Our Special Correspondent)

An international symposium on "Nuclear Physics and Cyclotron Energies", was held at the Variable Energy Cyclotron, Bhabha Atomic Research Centre, Salt Lake, Calcutta. The Chief Minister of West Bengal, Mr. Jyoti Basu inaugurated the symposium.

Mr. Basu said that, the cyclotron had the potential to serve as the nucleus for creative research in the field of nuclear physics, radio-chemistry, bio-physics and medicine. It had also the potential to produce radio-active isotopes for medical use. A demand had been made for a nuclear medicine research unit with radio-isotopes for diagnostic and therapeutic purposes. The Chief Minister promised to discuss it later. He assured State Government help for the growth of the VEC project at Salt Lake. The research activities should be guided by well-defined objectives, so that it could bring good to the people. He suggested utilisation of science and technology for the 'advancement of civilisation and ending of exploitation'.

Dr. R. Ramanna, Director, Bhabha Atomic Research Centre, said that the setting up of the Variable Energy Cyclotron was in itself an important event since "there are only about twenty such machines in the world." While the machine, the building and other facilities cost Rs. 8 crores, Rs. 1 crore had been used for buying items from abroad. He said that a series of experiments had been planned with the Saha Institute of Nuclear Physics and the Tata Institute of Fundamental Research. 'It has always been our desire to stimulate scientific research by scientists in universities

and institutes of technology who undertake the major part of teaching in this country.'

Dr. Ramanna said that for India, the project would provide a facility for the study of radiation damage and the production of new isotopes which was not possible in the case of reactors. He felt that there are tremendous possibilities in what can be done with intermediate energies, be it in nuclear reactions, nuclear fission or development of heavy ion acceleration. In fact, the emergence of completely stripped heavy ions is probably going to revolutionise our ideas about the atomic nucleus itself."

Dr. B. D. Nag Choudhuri, Vice-Chancellor, Jawaharlal Nehru University, said that 'technological imperatives guide our action'. The machine set up in Calcutta would help scientists work in the field of nuclear physics. The type of things people visualised had both scientific and technological aspects.

Mr. C. Ambasankaran, project director of the VEC, said that the symposium had been organised in connection with the VEC becoming operational on June 16. He claimed that with the installation of a large "computational facility" the VEC laboratory would soon be the most advanced nuclear research centre in South-East Asia.

A spokesman of the project said that it had been planned to get an "external beam" from the machine by the end of the year and the extractor and switching magnet was being installed.

Dr. David L. Hendrie of the University of California, also spoke on the importance of cyclotron energies.

Study of bird migration

Dr. Salim Ali, leading Ornithologist of the country while speaking at a meeting organised by Indian Meteorological Society in Bombay said that great deal of information regarding the migratory birds has also been supplied by the mountaineers who go on expeditions to Himalayas as large scale of migration takes place there. The migration of birds all over the world has brought to light several characteristic for these types of birds.

The process of migration, according to Dr. Salim Ali, was continuing for the last one thousand years in India. The experiment of ringing birds for identification during their arrival in the country was first done by the Maharaja of Dhar in Central India in 1926.

Before migration, these birds put up fat which serves as a source of energy to them. The Bharatpur Bird Sanctuary is the avian abode. Dr. Salim said that Taj Mahal is a man-made wonder but Bharatpur Bird Sanctuary is a natural wonder.

Personal

1. Dr. Bidya Dhar Mishra has assumed charge of the office of the Vice-Chancellor of Utkal University.
2. Dr. Amrik Singh has been appointed Vice-Chancellor of Punjabi University, Patiala.
3. Dr. N.A. Karim, Dean of Students, University of Calicut, has been appointed Pro-Vice-Chancellor of the University of Kerala.

IAAL Elections Corrigendum

The word "reformed" should be read as "formed" and "revised" should be deleted on page 503 of the September 16, 1977 issue.

A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Psychology

1. Yardi, Shankar Raghunath. A comparative study of perceptions of structure, roles and functions of trade union by its members, office bearers, government officials and management. M.S. University of Baroda.

Sociology

1. Katkhede, Vinayak Ramchandra. Human relations in an industry. Marathwada University.
2. Santha Kumari, R. Impact of welfare measures on the backward classes in Kerala. University of Kerala.

Political Science

1. Prem Kumari. Problems of municipal finance in U.P. with special reference to Meerut Municipal Board. Meerut University.

Economics

1. Dube, Sushila. Non-wage benefits provided to the workers in cotton textile industry in Madhya Pradesh. University of Saugar.
2. Pathak, Moreshwar Gajanan. Roads and road transportation in Marathwada. Marathwada University.
3. Phukan, Umananda. Socio-economic problems of the ex-tea garden labour population in Assam. Gauhati University.
4. Raj, A. Shankar. A seasonal foodgrain policy model for India. Meerut University.
5. Sanghavi, R.L. Role of industrial estates in the industrial development of Gujarat. Gujarat University.
6. Sharma, Ram Pravesh. Economics of production and pricing of sugarcane in the District of Champaran, Bihar: A region of study of agro-economic set up. Bihar University.

Education

1. Kundley, Madhukar, Balkrishna. A test of literary creativity in Marathi. Nagpur University.
2. Mehta, Anjani Avantilal. Institutional climate as a factor of staff morale and student control ideology in the affiliated colleges of Gujarat University. M.S. University of Baroda.
3. Pande, Manohar Bhaurao. Interest, aptitude and personality factors as predictors of scholastic achievement. Nagpur University.
4. Passi, Bimla Balkrishna. Effect of instructional material and feedback upon the development of the teaching skills of induction and closure. M.S. University of Baroda.
5. Saksenna, Mithlesh. A critical study of Hindi composition of pupils of Std. VIII, IX and X of Hindi medium schools of Greater Bombay, with a view of improving their written composition. S.N.D.T. Women's University.

Commerce

1. Amte, Vasudeo Keshavrao. State trading in food-grains in Maharashtra State. Shivaji University.
2. Pandya, Harshvadan Janmetram. Gujarat-na khand udyogni nafakarakta-na valano. Sardar Patel University.
3. Shrivastava, Narayan Prasad. Jabalpur sambhag mein jiwan bima vyavsaya 1956 ke pashchat. University of Saugar.

HUMANITIES

Philosophy

1. Deenammal, Ontimetra. Ideology and education. Andhra University.
2. Rai, Moti Bir. Kant's philosophy of mathematics. University of Calcutta.

Linguistics

1. Shaw, Rameswar. A comparative study in the phonological system of Bengali and German. University of Calcutta.
2. Thakur Dass. Position of Eastern Hindi-Bihari dialects in Indo-Aryan: A study in language relationship. University of Delhi.

3. Usham Chetan Singh. Structural analysis of the Manipuri language. Gauhati University.

Fine Arts

1. Pande, Kamlesh Dutt. Bharatiya chitrakala mein nari chitran 1300 isvi tak. Meerut University.

Literature

English

1. Harcharan Singh. George Eliot's conception of the tragic. University of Delhi.
2. Patnaik, Bibudhendra Narayan. Complementation in Oriya and English. Central Institute of English and Foreign Languages, Hyderabad.
3. Ramachandra Rao, Karanam. The fiction of Raja Rao. Marathwada University.

Sanskrit

1. Jha, Sashi Nath. Mithilaya vyakaran prahayon param-parayam mahavyakaranan Dinbandhu. Kameshwar Singh Darbhanga Sanskrit University.
2. Kalkonde, Sulabha Gangadharrao. Dayvibhagavreel vigyaneshwar ani yimatvahan yanchayimattancha tolnik abhyagar. Nagpur University.
3. Kulkarni, Roopa Krishnarao. Prachin ani avarchin Sanskrit stotra sahitya. Nagpur University.
4. Mishra, Padamnam. Pananiya vyakaranon pracheen-vercheenmatyo sadhushabdanam swarupave. Kameshwar Singh Darbhanga Sanskrit University.
5. Pandey, Umesh Dutta. Rigveda ka kavya shastriya mulyankan. Bihar University.
6. Sharma, Laxmi Narayana. Shri Bhagwat Gita ke bhashyon ka adhyayan. Jiwaji University.
7. Sharma, Vachspati Tripathi. Pracheen Bharat kee dand vyavastha. Kameshwar Singh Darbhanga Sanskrit University.
8. Tripathi, Ravi Nandan. Vyagoga rupak ka vikas. University of Saugar.

Hindi

1. Chaurasia, Nathoo Ram. Bundelkhand ka lok kavi Issuri: Jiwan or sahitya. Awadesh Pratap Singh University.
2. Dabral, Vinay Kumar. Moula Ram Tanwer: Hindi kavi aur darshnik. Garhwal University.
3. Das, Bibha. A comparative study of Hindi and English tragedies of the 20th century. University of Calcutta.
4. Dubish, Aruna. Adhunik Hindi alochana mein rasampradaya ka vikas. Meerut University.
5. Gauri Shankar Singh. The titles and themes of early Maithili dramas in view of the printed dramas of Modern Indian languages, upto 1900 A.D. University of Calcutta.
6. Girdhar Gopal. Nai kavita kee vishist shabdawali. University of Delhi.
7. Goel, Vibha. Reetikaleen sant kavi Tulsisaheb aur unka kavya: Ek gavekshnatmak adhyayan. Meerut University.
8. Kasturia, Saroj Bala. Prasad sahitya mein naitik chetna. University of Delhi.
9. Kaushish, Usha. Adhunik pariprekshya mein Tulsi ke kavya ka naitik mulyankan. Meerut University.
10. Markanday, Saroj. Nirala sahitya mein yugeen samasayane. Meerut University.
11. Mishra, Shyam Krishnan. Dwivediyugeen samiksha: Visheshta Mishrabandhuon kee samiksha ka adhyayan. Vikram University.
12. Panthakar, Dinker. Nirala ke kavya ka sadhanamulak adhyayan. Vikram University.
13. Ram Gopal Singh. Maharaja Vishwanath Singh kee krityon ka sahityik anusheelan. Awadhesh Pratap Singh University.
14. Saxena, Prabha. Swatantryottar Hindi kahani per Freudvadi vichardhara ka prabhav, 1972 tak. Meerut University.
15. Sharma, Asha Lata. Nai kahani: Vastu aur shilp. University of Indore.

(Continued on page 542)

CLASSIFIED ADVERTISEMENTS

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2. A Doctorate Degree or Published work or equivalent standard.
3. Experience in conducting and guiding Research work for a considerable period.
4. Independent published work of High Standard in addition to requirement in (ii) above.
5. Teaching experience for at least ten years in a college or University with at least 7 years experience in teaching P.G./Honours classes.

6. Specialization

Preference will be given to the candidates having Specialisation in Inorganic Chemistry/Organic Chemistry/Physical Chemistry.

Qualification

As mentioned above for the post may be relaxed if the research work of a candidate as evident either from his/her thesis or from his/her published work is of a very high standard.

A Professor may also be appointed on contract basis for a specified period.

The posts carry the benefit of C.P.F. and Gratuity as sanctioned by the University from time to time.

Seven copies of the application forms will be supplied from the University Office to each candidate in person on cash payment of Rupees ten. Candidates intending to receive forms by post are required to send (a) Crossed Postal Order Rs 10/- payable to the Finance Officer, Sambalpur University (b) a self addressed envelope (23 cm x 10 cm) with postage stamps worth Rs 2.85 P. affixed to it with the words "APPLICATION FORMS FOR TEACHING POSTS IN SAMBALPUR UNIVERSITY" superscribed on it. Money Order/Cheque will not be entertained.

The last date of receipt of applications is 31st October, 1977.

The candidates will be required to appear at an interview before a Selection Committee at their own expenses.

Documents submitted alongwith the application will not be returned.

All communication should be addressed to the Registrar, Sambalpur University by designation only. No interim correspondences in this regard will be entertained.

REGISTRAR

THE UNIVERSITY OF AGRICULTURAL SCIENCES

Administrative Office

GKVK Campus

Bangalore-562142

September 12, 1977

Advt. No. AO/6/1977

APPLICATIONS are invited from qualified persons for filling up the following posts temporarily in the University of Agricultural Sciences, Bangalore :

Sl. No.	Name of post	No. of posts	Place	Scale of pay Rs.
1	2	3	4	5
(1) ICAR & OTHER SCHEME POSTS				
AICRP on Oilseeds (Groundnut)				
1.	Junior Breeder	One	Kolar	400-40-800-50-950
AICRP on Oilseeds (Groundnut & Castor)				
2.	Junior Plant Pathologist	One	Dharwar	-do-
3.	Junior Chemist	One	-do-	-do-
4.	Junior Statistician	One	-do-	-do-
AICRP on Sugarcane				
5.	Junior Agronomist	One	Mandya	-do-
6.	Junior Breeder	One	-do-	-do-
AICRP on Tobacco				
7.	Nematologist	One	Shimoga	700-50-1250
8.	Farm Manager	One	-do-	400-40-800-50-950
AICRP on Rice				
9.	Junior Pathologist	One	Mandya	-do-
AICRP on Microbiological Decomposition on Organic matters etc.				
10.	Senior Microbiologist	One	Hebbal	700-50-1250
AICRP on Water Management & Salinity				
11.	Agricultural Engineer	One	Dharwar	-do-
12.	Junior Chemist	One	-do-	400-40-800-50-950
13.	Junior Statistician	One	-do-	-do-
AICRP on Dryland Agriculture				
14.	Agricultural Engineer	One	Hebbal	700-50-1250
15.	Plant Breeder	One	-do-	-do-
AICRP on Dryland Agriculture — Sub-Centre				
16.	Junior Engineer	One	Bijapur	400-40-800-50-950
17.	Junior Soil Physicist	One	-do-	-do-
AICRP on Oilseeds — Safflower				
18.	Junior Agronomist	One	Annigeri	-do-
AICRP on Saline Water in Agriculture				
19.	Soil Scientist	One	Dharwar	700-50-1250
20.	Junior Plant Breeder	One	-do-	400-40-800-50-950
21.	Junior Plant Physiologist	One (LV)	-do-	-do-
AICRP on Studies on Harvest and Post-Harvest Technology				
22.	Junior Entomologist	One (LV)	Raichur	-do-
AICRP on Potato Improvement				
23.	Junior Agronomist (Horticulture)	One	Hassan	-do-
24.	Junior Entomologist	One	-do-	-do-
25.	Junior Pathologist	One	-do-	-do-
Centrally sponsored scheme for Drought Prone Areas Programme— Agro-economic research under the World Bank Programme				
26.	Agricultural Economist	One	Bijapur	-do-
AICRP on Tuber Crops (other than Potato)				
27.	Junior Agronomist (Horticulture)	One	Mangalore	-do-
Scheme on Physiological limitations in the productivity of Corn				
28.	Junior Agronomist	One	Hebbal	-do-
Setting up of an advanced centre for research on Black Cotton Soils in Karnataka				
29.	Drainage Engineer	One	Dharwar	700-50-1250
Applied Research trials on Pastures and forage mixtures and mixed farming systems (KDDC Project)				

1	2	3	4	5
30.	Assistant Professor (Dairy)	One	Hebbal	400-40-800-50-950
31.	Assistant Professor (Nutrition)	One	-do-	-do-
	Epidemiological studies on Leptospirosis in Karnataka State (Scheme sponsored by Science & Technology Deptt., Govt. of India)			
32.	Microbiologist	One	Hebbal	1100-50-1300-60-1600
33.	Asst. Microbiologist	One	-do-	400-40-800-50-950
	Project for production of Super-Elite and Elite Sunflower Seeds			
34.	Oil Chemist	One	Hebbal	-do-
	Krishi Vigyana Kendra, Hanumanmatti (ICAR Project)			
35.	Training Organiser (Ag. Engineering)	One	Hanumanmatti	700-50-1250
36.	Training Organiser (Home Science)	One	-do-	-do-
	ICAR Agronomic Research Project (Project Coordinator's Wing)			
37.	Senior Scientist (Agronomy/Soil Science)	One	Hebbal	1100-50-1300-60-1600
38.	Junior Agronomist	One	-do-	400-40-800-50-950
39.	Junior Soil Chemist	One	-do-	-do-
	Coordinated programme of research on Bio-gas technology			
40.	Senior Microbiologist	One	Dharwar	700-50-1250
41.	Junior Agricultural Chemist/Biochemist	One	-do-	400-40-800-50-950
	AICRP on Spices & Cashewnut			
42.	Junior Plant Pathologist	One	Mudigere	-do-
(2) UAS' POSTS				
43.	Technical Officer (Technical Audit Agency) (Lien vacancy)	One	Hebbal	700-50-1250
44.	Technical Assistant to Director of Research	One	Hebbal	400-40-800-50-950
45.	Professor of Fish Processing Technology	One	Mangalore	1100-50-1300-60-1600

NOTE: 1. The prescribed application form along with the qualifications prescribed for the above posts and the Instructions sheet can be had in person from any of the following Offices of the University on presentation of a crossed postal order for Rs. 2/- drawn in favour of the Comptroller, UAS, Bangalore:

- (1) Administrative Officer, GKVK Campus, Bangalore 562142.
- (2) Director of Instruction, Agricultural College, Hebbal, Bangalore 560024.
- (3) Director of Instruction, Agricultural College, Dharwar 580005.
- (4) Director of Instruction, Fisheries College, Mangalore.
- (5) Principal, Agricultural Engineering Institute, Raichur 584101.
- (6) Chief Scientific Officer, Regional Research Station, Mandya.

2. Applications can be had by post only from the Office of the Administrative Officer, UAS, GKVK Campus, Bangalore 562142, enclosing a crossed postal order as indicated above and also enclosing a self-addressed stamped (0.45 ps.) envelope. The last date for receipt of requisitions by post is 6th October, 1977 (6.10.77).

3. All Ex-Servicemen and members of the families of Defence personnel killed or disabled in action are exempted from payment of the application fee as mentioned above. However, requisitions for application forms from such persons should accompany necessary certificates in this regard.

4. Filled in application forms should reach the Administrative Officer, UAS, GKVK Campus, Bangalore 562142, on or before 13th October 1977. Applications received after this date shall summarily be rejected.

5. The pay scales mentioned above are likely to be revised to UGC Scales of Pay.

ADMINISTRATIVE OFFICER

SAMBALPUR UNIVERSITY JYOTI VIHAR : BURLA

No 34552/TDC

Dated : 8.9.77

Application with attested copies of marksheets and certificates of all examinations passed are invited in the prescribed form for appointment of Lecturers in Mechanical Engineering on regular basis and on adhoc basis for the U.C.E, Burla. Persons who will be appointed on adhoc basis will be considered for appointment on regular basis on obtaining the minimum required qualification for the post.

Qualification for regular appointment Essential

- (a) A 1st class Master's Degree in Mechanical Engineering with good Academic Record.
- (b) Two years Industrial or professional experience.

Desirable

- (a) Capacity to conduct independent research.
- (b) Doctorate Degree or published research work of equivalent standard.

II. Qualification for Adhoc appointment

First Class Bachelor's Degree in Mechanical Engineering with good academic record.

III. Scales of pay-Rs. 700-40-1100-50-1600.

(The posts carries C.P.F.-Cum-Gratuity benefits as would be sanctioned by the University from time to time in the cases of regular appointment).

IV. Age of retirement-Sixty years for all the above posts.

Seven copies of the application form will be supplied from the University office to each candidate in person on cash payment of Rs 10/- (Rupees ten only). Candidates intending to receive form by post are required to send (a) Crossed Indian Postal Order of Rs. 10/- payable to the Finance Officer, Sambalpur University, Jyoti Vihar, Burla (b) Self addressed envelope (23x10 cm) with postage stamps worth Rs. 2.85 affixed to it with the words "APPLICATION FORM FOR TEACHING POSTS IN THE SAMBALPUR UNIVERSITY" super-scribed. Money Order, Cheque or Bank Draft will not be entertained.

The last date of receipt of application by the undersigned is 30.10.1977.

Candidates will be required to appear before a Selection Committee appointed by the University at their own expenses. Selected candidates will be required to join the post within one month from the date of issue of appointment order.

Issue of this advertisement does not make it binding on the part of the University to make appointment.

All communications should be addressed to the undersigned by designation and not by name. No interim reply to any query shall be given.

REGISTRAR

**PANJAB UNIVERSITY
CHANDIGARH**

Advertisement No. 26/77

Applications are invited for two posts of Professors of Economics in the pay-scale of Rs. 1500-60-1800-100-2000-125/2-2500, so as to reach the Registrar, Panjab University, Chandigarh, along with postal orders for Rs. 7.50 by October 24, 1977.

**Qualifications
Essential**

- (i) A first or high second class Master's degree of an Indian University or an equivalent qualification of a foreign University in the subject with bright academic record.
- (ii) Either a research degree of doctorate standard or published research work of high standard in the subject, in journals of repute.
- (iii) About 10 years experience of teaching post-graduate classes at a University or college level and experience of guiding research.

Desirable

Specialisation in Econometrics & Mathematical Economics, for one of the posts.

Candidates who do not possess a Doctoral degree are required to submit 10 typed/cyclostyled copies of brief return of their research/published work.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees may, however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of 'No Objection Certificate' from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the Office of the Finance & Development Officer, Panjab University, Chandigarh, by making a written request accompanied with self-addressed stamped envelope of 23 x 10 cms.

* * *

**GURU NANAK DEV UNIVERSITY
AMRITSAR**

Advertisement No. 22/77

Applications are invited for the following posts on prescribed form obtainable (free of cost) from Office of the Registrar, Guru Nanak Dev University, Amritsar by making written request accompanied by self-addressed stamped envelope of 23 x 10 cms. so as to reach this office by 18-10-1977 along with crossed postal order(s) for Rs. 7.50 for posts at Sr. No. 1 to 3 and

Rs. 5/ for posts at St. No. 4 to 6 drawn in favour of Registrar, Guru Nanak Dev University, Amritsar. Application fee is not refundable.

Note : Persons already in employment must send their applications through their employer.

Grade : (Plus allowances as admissible under University rules).

1. Professors (Grade Rs. 1500-60-1800-100-2000-125/2-2500) in Mathematics and Political Science.
2. Readers (Grade Rs. 1200-50-1300-60-1900) in Biology, Economics, Law and Library Science.
3. Lecturers (Grade Rs. 700-40-1100-50-1600) in Political Science and Psychology (temporary).
4. Research Assistant in Economics (Grade Rs. 300-25-350/25-400-30-610/30-640-40-800)
5. Jr. Research Fellows (U. G. C.) (Rs. 400 p. m. fixed) in Economics and Mathematics.
6. Research Fellows (Rs. 400 p.m. fixed) in Economics, Pol. Sc., History.

Qualifications for the posts of Professors and Readers : i) A Doctor's degree or published work of an equally high standard. (ii) Consistently good academic record with 1st or high 2nd class (b+) Master's degree in relevant subject or an equivalent degree of a foreign University. (iii) About 10 years experience of teaching postgraduate classes and guiding research in the case of professors. About 5 years' experience of teaching postgraduate classes and post-doctoral research work in case of Readers. (iv) Knowledge of Panjabi and a foreign language other than English will be an additional qualification.

For the posts of Lecturers : i) A Doctor's degree or published work of an equally high standard; and (ii) Consistently good academic record with 1st or High 2nd class (b+) Master's degree in the relevant subject or an equivalent degree of a foreign University. (iii) Teaching/research experience and knowledge of Punjabi and a foreign language other than English will be additional qualification.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (ii) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record (due weightage being given to M. Phil or equivalent degree or research work of quality) may be appointed on

the condition that he will have to obtain a Doctor's degree or give evidence of published work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation : Consistently good academic record means overall record of all assessments throughout the academic career leading to Master's degree, which should at least be (b+) or high second class.

For post at Sr. No. 4 : i) Good academic record with (b+) Master's degree in Economics. (ii) Research experience/aptitude for research.

For post at Sr. No. 5 & 6 : i) First or High Second Class Master's degree in the subject concerned with good academic record. (ii) Aptitude for research.

SPECIALIZATIONS

Professor of Political Science : i) Political Theory. (ii) International Politics. (iii) Comparative Politics.

Readers in Biology : Ecology/Animal Physiology/Plant Physiology/Experimental Embriology/Bio-Chemistry (Animal)/Plant Systematics/Genetics/Biosystematics/Population Biology/Molecular Biology/Microbial Genetics or any other modern and interdisciplinary area in Biology.

Readers in Economics : For first post : Economic Statistics and Econometrics. For second post : Agricultural Economics/Industrial Economics/Money and Banking/Public Finance. (One post is permanent and one post is temporary).

Readers in Law : Constitutional Law/Family Law.

Desirable Qualification for Reader in Library Science : Experience of working in a University Library.

Lecturer in Psychology : (i) Social Psychology. (ii) Developmental Psychology. (iii) Clinical Psychology (iv) Industrial Psychology.

**Lakha Singh Sandhu
REGISTRAR**

* * *

**KUMAUN UNIVERSITY
NAINITAL**

Advt. No. 2433

Dated 27-9-1977

Applications are invited for the posts of Lecturers in Physics, Chemistry, Botany, Zoology, Mathematics, Hindi, Sanskrit, English, Economics, Political Science, History, Sociology, Geography, Drawing and Painting, Education, Commerce, Tourism, Banking Accountancy Diploma course, Forestry for constituent Colleges of the University located at Nainital and Almora.

Qualifications (Essential)

(a) A doctorate Degree or a published work of a high standard in the subject concerned.

(b) Consistently good academic record (that is to say the overall record of all assessments throughout the academic career of candidate), with first class or high second class (that is to say with an aggregate of more than 54 percent marks) Master's degree in the subject or equivalent degree of a foreign university in such subject.

2. Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause (1).

If a candidate possessing the qualification specified in sub-clause (a) of clause (1) is not available or is not considered suitable, a person possessing a consistently good academic record (due weightage being given to M. Phil. or equivalent degree or research work of quality) will be appointed on the condition that he will have to attain the required qualifications, within five years of his appointment, failing which he shall not earn future increments until he fulfils the conditions.

Experience

Persons having teaching experience of Post-graduate classes will be given preference.

Desirable

1. M.A. in Geography/Economics/History, who has been in the trade as a Government Officer or in private travel agency and experience of U.P. and Himalayan region and well versed in field experience of travel trade will be given preference for the post of Lecturer in Tourism.

2. Persons having specialisation in Accountancy and practical experience in Industry or Government Organisations will be given preference for the post of Lecturer in Banking Accountancy Diploma course.

There will be reservations for S.C./S.T. according to the university rules. If the candidates of above categories are not found suitable, the vacancy will be filled up from the general candidates.

All the above posts carry dearness allowance and benefit of provident fund as admissible under the rules of university on confirmation.

The prescribed application form can be available on request accompanied by a self addressed envelope of size 28x10 cm. having affixed postal stamp of Rs 2.85 from the Office of the Registrar, Kumaun University and applications complete in all respects together with a crossed postal order of Rs 10/- (non-refundable) in favour of Finance Officer should reach the university by 29th October, 1977.

Candidates already in service should apply through proper channel.

The university reserves the right to fill up or not to fill up the post adver-

tised and/or to call the candidates for interview to whom it considers suitable.

NOTE : The candidates who have already applied for the post of Lecturer Toursim, Banking Accountancy, Forestry need not apply again.

REGISTRAR

ALIGARH MUSLIM UNIVERSITY Advertisement No 21/77-78

Applications, on the prescribed form, are invited for the following posts:

Candidates must possess Medical qualifications included in first or second schedule or part II of the third schedule (other than licentiate qualifications) of the Indian Medical Council Act 1956. Holders of educational qualifications included in Part II of third schedule should fulfil the conditions stipulated in Section 13(3) of the Indian Medical Council Act, 1956. Must possess a basic University or equivalent qualification entered in schedules under State/Central Medical Registration Act (for the post at Sl. No. 1 only).

1. Lecturer in Preventive & Social Medicine & Lecturer (Medical Officer of Health), SPM Department. Scale Rs 700-40-1100-50-1600 plus allowances. Qualifications

M.D. (Social & Prev. Medicine), Speciality Board of Social & Prev. Medicine (USA). Dr. P.H. (John Hopkins), Dr. P.H. (Harward) Dr. P.H. (California), M.D. (Medicine) with D.P.H. The requisite recognised postgraduate qualification, in the subject and three years teaching experience as Tutor/Demonstrator in SPM or as Epidemiologist/Health Officer of which one year should be after Postgraduate qualification.

2. Officer Incharge Training Placement, Z.H. Engineering College. Scale Rs. 1500-60-1800 plus allowances. Qualifications

(a) A first or high second class basic degree in Engineering; (b) Ordinarily postgraduate degree in Engineering; (c) Ordinarily ten years experience of which atleast three years should be in Industry and two years in teaching/research with a Senior position in Industrial/teaching/research Organisation.

Desirable

Experience of supervising or arranging practical training and placement of Engineering Graduates in Industry and of looking after students welfare.

Note

Those who have already applied for the post of Professor Incharge, Training & Placement need not apply again.

1. Reader in Arabic. Scale Rs 1200-50 1300-60-1900 plus allowances.

Qualifications

(a) A first or a high second class Masters Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research Degree of a doctorate standard or published work of a high stand-

ard; and (c) At least five years experience of teaching postgraduate classes and some experience of guiding research.

4. Lecturer in Chemistry, Z.H. Engg. College. Scale Rs 700-40-1100-50-1600 plus allowances.

Qualifications

(a) A Doctors Degree or research work of an equally high standard; and (b) consistently good academic record with first or high second class (B in the seven point scale) Master's Degree in the subject concerned or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

5. Lecturers in Political Sciences (Temporary but likely to become permanent). Scale Rs. 730-40-1100-50-1600 plus allowances.

Qualifications

(a) A Doctors Degree or research work of an equally high standard, and (b) consistently good academic record with first or high second class (B in the seven point scale) Master's Degree in the subject concerned or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's Degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's Degree or give evidence of research work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 CM. Last date for receipt of applications is 22nd October, 1977. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

Jamalur Rahman
REGISTRAR

A list of select articles culled from periodicals received in AIU library during September, 1977.

EDUCATIONAL PHILOSOPHY

- Dahrendorf, Ralf. "Case for strengthening what is strong". *Times Higher Education Supplement* (304); 26 Aug 77:5.
- Husen, Torsten. "Problems of securing equal access to higher education: The dilemma between equality and excellence". *Higher Education* 9(4); Nov 76: 407-22.
- Middleberg, Maurice I. "Moral education and the liberal arts". *Educational Record* 57(4); Fall 76: 236-40.
- Proctor, Samuel D. "Education and the humanization of society". *Educational Record* 57(4); Fall 76: 241-6.

EDUCATIONAL SOCIOLOGY

- Hamalian, Arpi. "Good professors: A subculture of professors in the United States and England". *Higher Education Bulletin* 4(1); Winter 75: 91-103.
- Parker, Clyde A. "Student indiscipline in Indian universities". *University Administration* 3(1); Jan 76: 16-35.

EDUCATIONAL PLANNING

- Drake, Keith. "Educational planning by halves". *Higher Education Review* 9(1); Autumn 76: 45-57.
- Fowler, Garry. "Looking before leaping is only safe way forward". *Times Higher Education Supplement* (305); 2 Sept 77: 11.

- Salter, Brian. "Student residence: Policies or promises?". *Higher Education Review* 9(1); Autumn 76: 31-43.

EDUCATIONAL ADMINISTRATION

- Amrik Singh. "Problems of small colleges in Punjab". *University News* 15(16); 16 Aug 77: 431, 433.
- Denizos, Demetris, Solliard, Mireille and Paltenghi, J.J. "Resource allocation processes and internal government in Swiss universities". *Higher Education* 5(4); Nov 76: 397-406.
- Dunworth, John and Cook, Rupert. "Budgetary devolution as an aid to university efficiency". *Higher Education* 5(2); May 76: 153-67.
- Ghosh, D.K. "Rejuvenating the university administration". *University News* 15(16); 16 Aug 77: 434-5.
- Goldschmidt, Dietrich. "Participatory democracy in schools and higher education: Emerging problems in the Federal Republic of Germany and Sweden". *Higher Education* 5(2); May 76: 113-33.

- "Padmavathy College of Science and Technology: A case study". *University Administration* 3(1); Jan 76: 96-102.

- Sommers, Alexis N. "University productivity". *Educational Record* 57(4); Fall 76: 251-6.

- Sunnymore. "Psychopathology of academic bureaucracy". *University Administration* 3(1); Jan 76: 92-5.

CURRICULUM

- Portia, D.R. "Curriculum development in higher education". *University Administration* 3(1); Jan 76: 48-53.

TEACHING

- Bridge, Will. "Self-study courses in undergraduate science teaching: Report of a survey". *Higher Education* 5(2); May 76: 211-24.
- Goldschmidt, Marcel L. "Teaching and learning in higher education: Recent trends". *Higher Education* 5(4); Nov: 76: 437-56.

(Continued from page 537)

16. Sharma, Kiran Bala. *Tulsi kee bhasha ka vyakaran*. University of Delhi.

17. Sharma, Ram Kanwar. *Vrandawanlal Verma aur Walter Scot ke aitihasik upanyason kee shilpvidhi ka tulnatmak adhyayan*. Meerut University.

Urdu

1. Jamal, Arshad. *Shibli kee seerat nigari*. Nagpur University.

Bengali

1. Mukhopadhyay, Prasun Kumar. *Bangiya rangamancha-o-natyakalar palapadal*. University of Calcutta.

2. Pal, Rabindranath. *Rabindra parabarti Bangla chhotogalpa*, 1923-47. University of Calcutta.

Marathi

1. Purohit, Vasant Shivaramant. *Shridhari tika va Eknathi Bhagwat yancha tolnik abhyayas*. Nagpur University.

Geography

1. Tawde, Mohan Dattatray. *Fruit farming in the Ratna-*

- Nelsson, Olof. "Mathemagenic activities and teaching: A review". *Higher Education Bulletin* 4(2); Summer 76: 159-97.

- Perlberg, Arye. "Use of laboratory systems in improving university teaching". *Higher Education* 5(2); May 76: 135-51.

- Reddy, N.Y. "Programmed learning: Is it an effective technique in teaching?". *University Administration* 3(1); Jan 76: 54-67.

- Rhodes, Dent M. "Achieving teaching excellence: Some misconceptions and a proposal". *Higher Education Bulletin* 4(2); Summer 76: 105-21.

- Shore, Bruce M. "Success and failure of formal teaching improvement efforts in higher education". *Higher Education Bulletin* 4(2); Summer 76: 123-38.

EDUCATIONAL RESEARCH

- Harvey, A.D. "Universities as subjects of academic study". *Higher Education Review* 9(1); Autumn 76: 19-30.

- Joshi, D.C. and Sharma, R.C. "Bibliography of research projects completed on higher education in India". *University Administration* 3(1); Jan 76: 68-75.

ECONOMICS OF EDUCATION

- Bardhan, A.B. "Employment guarantee scheme and rural unemployment". *Mainstream* 15(52); 27 Aug 77: 3-5.

- Common, Micheal S. "Costs of university admissions". *Higher Education Review* 9(1); Autumn 76: 58-75.

- Saunders, P.G. and Levin, E. "Finance of student maintenance and the parental contribution system, 1959-74". *Higher Education Bulletin* 4(1); Winter 75: 5-22.

- Simkins, Tim. "Recurrent education: Some economic issues". *Higher Education* 5(4); Nov 76: 363-76.

- Sinah, Arun P. "Demand characteristics of an educational market: Factors and forecast—a case study". *University Administration* 3(1); Jan 76: 36-45.

- Trow, Martin. "Implications of low growth rates for higher education". *Higher Education* 5(4); Nov 76: 377-96.

COMPARATIVE EDUCATION AND COUNTRY STUDIES

- Amrik Singh. "Mess that is education". *Illustrated Weekly of India* 98(34); 21-27 Aug, 77: 8-13.

- Hounsell, Dai. "Academic year 1974-75: A survey". *Higher Education Bulletin* 4(1); Winter 75: 39-74.

- Mahajani, G.S. "Some issues in higher education". *University News* 15(16); 16 Aug 77: 432-3.

- Sharma, Ramesh Chandra. "Educational innovation and change in India: Trends and bibliography". *University Administration* 3(1); Jan 76: 76-86.

- Sinah, Dharni P. "State education administration in Andhra Pradesh: Review and analysis, 1956-76". *University Administration* 3(1); Jan 76: 1-15.

- Van de Graaff, John H. "Academic power, excellence and equality: Evolving patterns in seven national systems". *Higher Education Bulletin* 4(2); Summer 76: 139-57.

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TATA INSTITUTE OF SOCIAL SCIENCES, SION-TROMBAY ROAD, DEONAR

BOMBAY-400 088

Applications in the prescribed form which can be had along with the details of qualifications, experience, nature of duties etc. from the above address either personally or by sending self-addressed envelope (23½ × 10 cms) with stamps worth 0.70 paise are invited for the following posts along with application fee of Rs. 10/- & Rs. 5/- for post 4 & enclosures:

1. **Professor in Social Work** in the scale Rs. 1500-60-1800-100-2000-125/2-2500, plus D.A. and other allowances. 2. **Reader in the Unit for Research and Consultancy in Social Policy and Social Welfare Administration** in the scale Rs. 1200-50-1300-60-1900 plus D.A. and other allowances. 3. **Lecturers** in the scale Rs. 700-40-1100-50-1600 plus D.A. and other allowances. Two permanent posts (i) One in the Unit for Research and Consultancy in Social Policy and Social Welfare Administration (ii) One in the Unit for Urban Studies with specialisation either in Sociology, Economics, Public Administration or Management Studies. 4. **Assistant Lecturers** in the scale Rs. 350-25-675 plus D.A. and other allowances. (i) One permanent post in the Research Unit for Study of the Urban Child and Youth (ii) One permanent post in the Family and Child Welfare Department. All the above except (1) & 4 (ii) are primarily research posts though they may involve some teaching. Last date for receipt of request for application form is **October 10, 1977** and the last date for receipt of completed application form is **October 31, 1977**.

**N. Krishnamoorthy
REGISTRAR**

* * *

**SRI VENKATESWARA
UNIVERSITY**

Applications are invited from persons possessing the qualifications mentioned below for the following posts:

I. POSTGRADUATE DEPARTMENTS TO BE STARTED AT KURNOOL:

Reader in Economics	—	One
Reader in Quality Control & Operational Research	—	One
Lecturers in Economics	—	Two
Lecturers in Quality Control & Operational Research	—	Two

II. POSTGRADUATE DEPARTMENTS TO BE STARTED AT CUDDAPAH:

Reader in Commerce	—	One
Reader in Public Administration	—	One
Lecturers in Commerce	—	Two
Lecturers in Public Administration	—	Two

SCALES OF PAY

(i) Reader: Rs. 1200-50-1300-60-1900
(ii) Lecturer: Rs. 700-40-1100-50-1600
(Usual allowances will be given)

QUALIFICATIONS

Reader in Economics (i) A first or high second class in M.A. (Economics); (ii) A research degree of a doctorate standard or published work of an equally high standard; (Preference to

those who have done research work on Regional Economics/ Area Planning/Regional Economic Studies/Planning techniques); and (iii) Not less than five years teaching experience (relaxable in the case of those who have specialised in the above areas)

Desirable : 1. Experience in guiding research;

2. Publications.

Lecturer in Economics: (i) A first or high second class in M.A. (Economics) and (ii) a research degree of a doctorate standard or published work of an equally high standard. (Preference to those who have specialised in Regional Economics/Area Planning/Regional Economic Studies/Planning Techniques/Quantitative techniques/ Demography).

Desirable: Experience in Teaching and Publications.

Reader in Quality Control & Operational Research : (i) A first or high second class in M.A./M.Sc. in Quality Control/Operational Research, or in Statistics with specialisation in Operational Research/Quality Control; (ii) A research degree of a doctorate standard or published work of an equally high standard (must have done research on Quality Control/Operational Research), and (iii) Not less than five years teaching experience (Relaxable in the case of those who have specialised in Quality Control & Operational Research).

Desirable : 1. Experience in Guiding research;

2. Publications.

Lecturers in Quality Control & Operational Research : (i) A first or high second class in M.A./M.Sc. in Quality Control/Operational Research or in Statistics with specialisation in Quality Control Operational Research; and (ii) a research degree of a doctorate standard or published work of an equally high standard (Relaxable).

Desirable : Experience in Teaching and Publications.

Reader in Commerce: A first or high second class in M.Com. with Advance Accountancy or Cost Accountancy; (ii) a research degree of a doctorate standard; or published work of an equally high standard; and (iii) Not less than five years teaching experience.

Desirable : 1. Experience in Guiding Research;

2. Publications.

Lecturers in Commerce : (i) A first or high second class in M.Com. and A.I.C.W.A., or I or high second class M.Com. with Advance Accountancy/ Cost Accountancy or B.Com., with F.C.A.; and (ii) a research degree of a doctorate standard or published work of an equally high standard (Relaxable). **Desirable** : Experience in Teaching and Publications.

Reader in Public Administration: (i) A first or high second class M.A. in Public Administration/Political Science (preference for M.A.'s in public Administration); (ii) a research degree of a doctorate standard or published work of an equally high standard (preference to one who has done research on or a subject relating to Public Administra-

tion); and (iii) one of the following (a) Degree/Diploma in Personnel Management; (b) Degree/Diploma in Industrial Relations; (c) Degree/ Diploma in Local Self-Government; and (iv) not less than five years teaching experience (Relaxable).

Desirable: 1. Experience in Guiding Research;

2. Publications.

Lecturers in Public Administration: (i) A first or high second class in M.A. Public Administration/Political Science (preference for Public Administration); and (ii) a research degree of a doctorate standard or published work of an equally high standard. Candidates with these additional qualifications will be preferred: 1. Degree/Diploma in any of these: Personnel Management, Local Self-Government, Industrial Relations; or (2) Training in Organisation and Methods; or (3) Acquaintance with or Training in Local Self-Government or Organisation of Industry. Persons with Masterate Degrees in Personnel Management/Industrial Relations along with Diplomas in Public Administration/ Training in Organisation & Methods may also apply for these posts.

Desirable: Experience in teaching and publications.

Applications on plain paper giving the following details together with attested copies of certificates, testimonials etc., and with Registration fee of Rs 20/-, either by Andhra Bank/State Bank of India Challan or by a crossed Indian Postal Order drawn in favour of the Registrar, S.V. University, Tirupati and payable in the S.V. University Campus Post Office, Tirupati-517502, may be sent to the Registrar, S.V. University, Tirupati, Andhra Pradesh, so as to be received on or before **8-10-1977**.

1. Name of the post applied for:

2. Name and Address:

3. Date of birth and age:

4. a. Nationality:

b. Whether belongs to S.C./S.T./B.C.:

5. Educational qualifications: giving details of examinations passed with percentage of marks, rank, specification etc.

6. Details of experience :

a. Employment:

b. Research:

7. Particulars of Registration fee of Rs. 20/- paid.

There will be reservation for S.C./S.T./B.C. for LECTURER POSTS according to U.G.C./State Government guidelines. Selected persons for above posts will be posted in University Post-Graduate Departments in Kurnool and Cuddapah. Persons in employment should send their applications through proper channel.

The University reserves to itself the right to fill or not to fill any posts. The qualifications may be relaxed at the discretion of the Selection Committee and Syndicate when candidates with prescribed qualifications are not available and to consider and appoint persons who may not have applied.

Dt: 14.9.1977

REGISTRAR

**BIDHAN CHANDRA KRISHI
VISWA VIDYALAYA**
P.O. MOHANPUR, WEST BENGAL
Advertisement No. Apptt. 5/77

Applications in prescribed form are invited for the post of Director of Research in the scale of Rs. 1500-60-1800-100-2000-125/2-2500/- plus a Special Allowance of Rs. 250/- and other allowances as admissible under Viswa Vidyalaya rules :

Qualifications: Essential:

- (i) Consistently good academic record with 1st or high 2nd Class (B+) Master's degree or recognised equivalent qualifications;
- (ii) Doctorate in Agriculture/Veterinary/Animal Sciences/Dairy Sciences/Fisheries/Forestry or in any of the Sciences basic to those;
- (iii) 10 years experience of research in any branch of Agriculture/Veterinary/Animal Sciences/Dairy Sciences/Fisheries/Forestry as evidenced by publication in standard journals;
- (iv) Ability to plan, organise, guide and administer research activities;
- (v) At least 5 years experience as Chief of a Research Organisation/Head of a research department in an Institution (national or State—at the University level) where research forms a major activity.

Desirable: Experience of:

- (i) Teaching at post-graduate level;
- (ii) Extension work in Agriculture.

Age: Below 50 years.

Experience and age limit may be relaxed on the recommendation of the Selection Committee in the case of a candidate otherwise well qualified. A high initial pay in the scale may be granted on the basis of qualifications, experience and present emoluments.

Selection will not necessarily be confined to those who will apply formally.

Applications must be submitted in the prescribed form which may be obtained from the office of the Registrar, Bidhan Chandra Krishi Viswa Vidyalaya, P.O. Mohanpur, Dist Nadia, West Bengal personally or by sending self addressed stamped (0.25) paise envelope (25cm x 12cm) on payment of rupees eight (Rs. 8.00) only for the post by crossed Indian postal order in favour of the Bidhan Chandra Krishi Viswa Vidyalaya. Persons already in employment should apply through proper channel. Candidates in abroad may also apply on plain paper with necessary Postal Order. Applications, completed in all respect should be submitted in an envelope superscribed with the name of the post and must reach office of the Registrar by the 17th October, 1977.

Candidates called for interview will have to appear for the same at their own cost.

REGISTRAR

**THE MAHARAJA SAYAJIRAO
UNIVERSITY OF BARODA**
BARODA

The last date for receipt of applications in response to the Advertisement issued under Notification No. 9 for the posts of Professors, Readers and Lecturers has been extended from 10.10.1977 to 1.11.1977.

**K.A. Amin
REGISTRAR**

**No. ADE/H/S 1/2290
26th September 1977**

* * *

**JAMIA MILLIA ISLAMIA
JAMIA NAGAR
NEW DELHI-110025**
Advtt. No. 11/77-78

CORRIGENDUM to Advt. No. 11/77-78 published in these columns in September 16, 1977 issue. It is informed to all concerned that the said advertisement for the post of Professor in Education (Teachers' College) has been withdrawn. Therefore the applications for this post will not be entertained.

Furthermore, the applications for the post of T.G.T. Science (Middle School) are invited from the candidates who have the combination of Physics, Chemistry and Biology at their B.Sc. degree only.

Zamir Hasan

Dated: 26.9.1977 OFFG. REGISTRAR

* * *

**UNIVERSITY OF INDORE
UNIVERSITY HOUSE
INDORE-452 001**

**No. Estt./III(1)/75-77 Dated 21-9-77
Advertisement**

Applications are invited for the post of Controller, University Printing Press in the pay scale of Rs. 700-50-1250/-. Dearness and other allowances and benefit of Provident Fund will be admissible according to the University Rules.

2. Essential Qualifications

- (a) Second class Bachelor's degree in Arts, Science, Commerce or Engineering and also Diploma in Printing and allied Trades from a recognised technical Institution/School/College of Printing in India.
- (b) Atleast 7 years experience in a responsible Supervisory capacity on a scale of pay not lower than Rs. 350-600/- in a printing press having modern mechanical composing, automatic printing machine etc.
- (c) Thorough knowledge of hand and mechanical composing, printing, machine minding binding, and all branches of printing trade, knowledge of copy fitting, manuscript editing, types, preparation of layout and display etc.

(d) Must have good knowledge of Hindi and English.

3. Age:- Preferably below 50 years.

Note

- (i) Candidates with outstanding record of Press management and/or as practising printers with conspicuous success in their line can be considered for exemption from the Diploma in Printing Technology.
- (ii) Candidates with outstanding technical qualifications and experience can be considered for relaxation in the requirement of academic qualifications shown at 2(a) above.

4. A higher initial start may be given to a candidate with higher qualifications and experience. Preference will be given to Scheduled Caste and Scheduled Tribe candidates, if found suitable. Candidates already in service should apply through proper channel.

5. Applications may be made on plain paper giving full particulars of all examinations passed alongwith copies of Mark-sheets and Certificates of experience together with a Crossed Postal Order of Rs. 7/-, payable to the Registrar, University of Indore, Indore so as to reach the undersigned not later than 25.10.1977. The envelope should be marked "Application for the post of Controller, University Press."

6. The University reserves the right to fill-up or not to fill-up the post and/or to call only selected candidates for interview at their own cost.

**A.G. Sharma
REGISTRAR**

* * *

**SOUTH GUJARAT UNIVERSITY
UNIVERSITY CAMPUS
UDHNA MAGDALLA ROAD
SURAT-7**

Applications in the prescribed forms (in eight copies) are invited for the post of Placement Officer in the Department of Business and Industrial Management of this University in the Scale of Rs. 1100-50-1300-60-1600.

Details regarding the qualifications and application forms prescribed can be had from the undersigned on payment of Rs. 7/- in Cash or by Postal Order drawn in the name of Registrar, South Gujarat University with self addressed envelope of 23 cm x 13 cm size duly stamped with 00-50 paise each.

The last date for receipt of the applications is 15-10-1977.

**G.A. Desai
REGISTRAR**

Dated: 17th September, 1977.

University News

A CHRONICLE OF HIGHER EDUCATION & RESEARCH OCTOBER 16, 1977 80 PAISE

Mess in Education • Choice in Examinations



Dr. S. Settar, Professor of History and Archaeology, Karnatak University (right), examining an Asokan rock edict found recently in a village in Bellary district of Karnataka.

**INDIAN INSTITUTE OF
TECHNOLOGY, KANPUR
KANPUR-208016**

Advertisement No. 24/77

Applications are invited for various faculty positions in the Institute in the following pay scales:

Professor: Rs. 1500-60-1800-100-2000-125/2-2500.

Assistant Professor: Rs. 1200-50-1300-60-1900.

Lecturer: Rs. 700-40-1100-50 1600.

The departments are seeking individuals with ability and aptitude for teaching in undergraduate/postgraduate programme, research and development in any of the areas of specialization listed under each. The number of positions available in each of the departments are also indicated below:

1. Department of Civil Engineering

- (a) Building materials
- (b) Construction and management
- (c) Design of concrete and Steel Structures
- (d) Design of offshore structures
- (e) Engineering geology and remote sensing
- (f) Pollution control
- (g) Reliability-based design of structure-soil-systems
- (h) Rock mechanics and underground Structures
- (i) Surveying, photogrammetry and resource evaluation
- (j) Transportation systems-navigational and material transport.

Number of positions: Six (Likely to be seven).

Positions: Assistant Professors and Lecturers.

2. Department of Mathematics

- (a) Algebra
- (b) Analysis
- (c) Differential Equations
- (d) Fluid dynamics
- (e) Functional analysis
- (f) Operations Research
- (g) Numerical Analysis
- (h) Statistics
- (i) Topology.

Number of positions: Five

Positions: Professors, Assistant Professors and Lecturers.

3. Department of Metallurgical Engineering

Areas of specialization for the post of Professor

- (a) Mechanical behaviour of metals (dislocation theory, plastic deformation, superplasticity),
- (b) Ceramics (processing, transformation, magnetic ceramic),
- (c) Extractive metallurgy (with emphasis on physico-chemical aspects),
- (d) Physical metallurgy (electron microscopy, phase transformations and point defects).
- (e) Corrosion and protection of metals and alloys.

Areas of specialization for the post of Assistant Professor and Lecturer

- (a) Electron microscopy and X-ray crystallography,
- (b) Ferrous extractive metallurgy,

(c) Physics of metals (with experience in setting up of facilities for magnetic and transport property measurements),

(d) Mechanical Processing (rolling, forging, extrusion)

(e) Casting technology/heat treatment (industrial experience essential),

(f) Welding metallurgy (industrial experience essential),

(g) Physical metallurgy (with specialization in materials for energy conversion).

Number of positions: Seven

Positions: Professor, Assistant Professor and Lecturer.

Qualifications for various Positions

Professor

Doctorate degree with good academic record and at least eight years of professional experience of good quality outside the work for the degree.

OR

M. Tech. with good academic record and at least fifteen years of industrial experience with brilliant record outside the work for the degree.

The candidates must have demonstrated ability of independence in teaching and research with significant contribution in the area of specialization evinced by the adequate number of research publications of good quality in journals of repute and/or developmental project reports of equivalent merit based on the work outside the candidates own thesis.

Assistant Professor

Doctorate degree with good academic record and at least three years of professional experience outside the work for degrees.

OR

M.Tech. with good academic record and at least seven years of industrial experience with good record outside the work for degree.

The candidates must have potential for independence in teaching and independent research work as demonstrated by adequate number of publication of good quality in journals of repute outside the candidate's own thesis, or equivalent development work done.

Lecturer

Doctorate degree with a good academic record and adequate research experience resulting in research papers of good quality.

OR

M. Tech. with good academic record and at least three years of teaching research/industrial experience with good record outside the work done for degree.

Desirable Qualifications in Civil Engineering

Basic degree in Civil Engineering for all the posts.

Desirable Qualifications in Mathematics

Master's degree in Mathematics/Statistics for all positions.

Desirable Qualifications in Metallurgical Engineering

Basic degree in Metallurgical Engg. for Assistant Professor's and Lecturer's category only.

The Indian Institute of Technology,

Kanpur has well equipped laboratories and central facilities. The Institute has a large computer centre with IBM 7044, IBM 1401, IBM 1800, PDP-1 systems with interactive graphic terminals and TDC-316 and a group of experienced programmers. The Institute has a well stacked library with more than 1,50,000 volumes and 1,300 periodicals. The central facilities include 2 MV Van de Graaff accelerator, 4096 multi-channel analyser and other radiation detection equipment, liquid nitrogen and liquid helium plants, NMR, EPR, Mass Spectrometer, X-ray plant, TV and IR spectrometers, glass blowing shop, crystal growth facility, central instrumentation laboratory, precision machine shop, electron microscope besides a large workshop for fabrication of specialised research apparatuses.

There is an Advanced Centre for Electronic Systems at the Institute. The Centre has been sponsored by the Ministry of Defence to carry out training and unclassified research and development work in the areas of communication and radar. Besides, an Advanced Centre for Materials Science has been established recently at the Institute by the Government of India to undertake research in the frontiers of development on materials of national importance.

The campus facilities include a primary and Higher Secondary School, a Health Centre and Shopping Centre.

Posts are permanent and carry retirement benefits in the shape of CPF Scheme or CPF-cum-Gratuity Scheme or GPF-cum-Pension-cum-Gratuity Scheme as may be opted according to rules. The age of retirement is 60 years. During the first year, the appointment will be on probation. Besides pay, posts carry allowances according to the Institute rules, which at present correspond to those admissible to the Central Government employees stationed at Kanpur. Higher initial pay is admissible to exceptionally qualified and deserving candidates. Candidates called for interview will be paid second class railway fare from the place of duty to Kanpur and back by the shortest route.

In the category of Lecturer, one post in each of the Departments will be reserved for SC/ST candidates. In the event of non-availability of suitable SC/ST candidates, the reserved posts would be treated as dereserved.

Applications from within India must be made on prescribed form obtainable free of charge from the Registrar of the Institute by sending a self-addressed unstamped envelope of 25 cm x 10 cm size. Applications should be accompanied by a postal order for Rs. 7.50 (1.87 for SC/ST candidates).

Applicants from abroad may apply on plain paper enclosing a complete biodata and names of three referees from whom reference letters may be obtained.

Applications should reach the Registrar, Indian Institute of Technology, IIT Post Office, Kanpur-208016 (India) on or before 15th November, 1977.

UNIVERSITY NEWS

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OCTOBER 16
1977

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Editor : ANJNI KUMAR

The Mess That Is Education

Amrik Singh*

**We spend Rs. 2,300 crores on education.
What do we get in return? What are the
social and economic consequences of
neglecting elementary and adult education?
Is our entire effort unproductive?**

There are two ways of assessing what India has achieved during the last thirty years in education. One is to reel off statistics and dazzle the reader with the immensity of the job accomplished. This would be the public relations approach and no one inclined to be serious or honest would adopt it.

The second approach is to call attention to the unfinished part of the job and the scale of operations involved, decry the triumph of quantity over quality and criticise the general air of futility and purposelessness that characterises the educational system. This would be taking an extreme position. Nor is it likely to help, for the purpose of any such assessment should be to see where we have gone wrong and how we can change our policies now.

It is generally assumed that education has not received as much support from the state as it ought to have. This is not correct. In 1976-77 the country spent over Rs 2,300 crores on education. This is quite close to the expenditure on defence for which Rs 2,550 crores was provided in the 1976-77 Budget. Since the Defence Budget constitutes a part of the Central Budget, one cannot help but notice it. In the case of education, however, the allocation is spread over the Central, State and Union Territory Budgets and is therefore not particularly visible. Furthermore, some allocations are included in grants for other Ministries—e.g. medical education under the Ministry of Health, agricultural education under the Ministry of Agriculture, and so on. All these allocations, when totalled up, come to over Rs 2,300 crores in 1976-77. Not only that, six years ago (1971-72), the sum allotted to education was 50% of the 1976-77 figure—Rs 1,118 crores to be precise.

Are We Using Our Resources Gainfully?

While it may be possible to find another Rs 100-200 crores for education, given the resources of the country, the constraints are obvious. The point to note here is that, since resources are limited and are determined by the overall wealth of the country, one should never forget that wastage in education is a crime. Most people involved in education are hardly aware of this aspect of the problem. They seem to assume that their job is to spend—and somehow the state will find the required resources.

If we are spending as much as Rs 2,300 crores annually on education and if we are unable to find

*Vice-Chancellor, Punjabi University, Patiala.

additional funds on a significantly larger scale, we must obviously ask ourselves: are we using our resources intelligently as well as justly? The answer to this question may be found with reference to two important and interlinked considerations: how far has the progress in education since 1947 contributed to the growth of the economy and how far has it ensured social justice?

That education has contributed substantially to the growth of the Indian economy is obvious. India today ranks tenth among the industrial nations of the world. Our agricultural output, although unsatisfactory till a few years ago, is improving. To some extent at least this development is the outcome of the work of the agricultural universities. Also, India today has the third largest scientific trained manpower in the world. And it has an industrial infrastructure which is capable of doing fairly sophisticated jobs; at least some Afro-Asian countries look up to us for leadership in this regard.

The Sinister Side

So much for the positive side. On the negative side, there is the undisguised fact that there is much greater poverty today as compared to a few years ago. For example, in the early sixties in their book, *Poverty in India*, Dandekar and Rath had estimated that 40% of the rural poor and 50% of the urban poor did not get two square meals a day. According to more recent estimates nearly 60% of the total population live below the poverty line. Indeed, these people are unable to buy the foodgrains that are available in government stocks. The situation on the unemployment front is equally grim. Ten years ago the number of people registered with employment exchanges was 2.7 million; the figure has grown beyond 10 million today. It is, however, a highly inadequate index of the state of unemployment and under employment that prevails all over the country. While the Planning Commission and others concerned are devising ways and means of creating more employment for the teeming millions, hardly any attention is being paid to the role played by education in contributing to the economic development of the country.

What is involved here is our definition of what constitutes development. If development means sophisticated technology and capital-intensive industries, the country has been moving along the right lines. But if growing destitution and unemployment are a part of this process of development, as seems only too evident, one cannot but question this strategy of development. This is also linked with the second issue: whether progress in education has also contributed to greater social justice.

The most obvious evidence of the failure of our system of education in bringing about greater social justice is the fact that more than two-thirds of the population is illiterate. Every now and then one hears of eradication of mass illiteracy and indeed one lives in the hope that one of these days this will come about. The fact, however, remains that after thirty years of independence universal literacy is only a distant dream yet.

In the days immediately following independence

there was a certain amount of enthusiasm for the literacy drive. But as it began to ebb away, a kind of informal understanding seems to have been reached that the best thing would be not to bother too much about literacy but to concentrate on the spread of primary education. Though something has been accomplished in that direction, it would be misleading to accept the publishing figures at their face value.

Young Dropouts

Approximately 60% children drop out before they reach the fifth standard. Those who drop out may be regarded as not having really attended. A child would hardly become literate if he dropped out by the age of 8 or 9. If he were to stay on till about 10 or 11 one could reasonably hope that he would not, in later life, lapse into illiteracy. According to the published figures, 86% of the relevant age group are enrolled in primary schools. Would it not be more accurate to say that 26.6% or, say, only one-quarter of the total eligible—are really enrolled in primary schools? To put it no more strongly, what we have accomplished in terms of social justice during these thirty years is to make at best only a quarter of the children literate and leave the rest to their fate. Clearly, adult illiteracy is here to stay.

It should not have been necessary to analyse this at length but for the misleading idea that if primary education were to succeed, in course of time everybody would become literate. That is not going to happen because primary education is highly restrictive in scope. And most parents are too poor to send their children to school. What is more, they do not see any likely improvement in their situation if children do become literate.

The task is immense, while the resources available are limited. Approximately 40% of the primary schools are one-teacher schools. And only a few of them have suitable buildings and other facilities. Secondly, the spread of primary education is no substitute for adult education on a mass scale. Should it be necessary to make a choice between two strategies, the country should opt for a mass campaign for the eradication of illiteracy rather than the existing wasteful and inefficient system of primary education. Primary education has, of course, to go on, but to rely on it for making everyone literate even in the long run is neither good economics nor good pedagogy.

This is easier said than done. Adult education is best undertaken through voluntary effort and through non-formal means of education. Voluntary effort however implies social and political mobilisation on a large scale. No political party in all these years has been attracted by this proposition. Countries like Cuba, Algeria and Vietnam have in recent decades successfully made the greater bulk of the population literate. The rest of the Third World countries, including India, have been mainly talking about it. If mass illiteracy has been eradicated in some countries and not in others, the explanation lies in the fact that high priority was given to it in those countries and the effort was backed by political commitment as well as mobilisation of resources, both financial and human.

Warped Priorities

The stark neglect of elementary and adult education is not accidental. It is a part of how our polity is organised and the strategy of development adopted by the country during the last three decades. The middle classes are vocal and know how to operate the levers of power. (As a matter of fact, there is a close liaison between educational entrepreneurs and political leaders—more than 50% of colleges in India have an enrolment of less than 400 students. According to the incomplete data of the Third Educational Survey carried out in 1975, out of 3,856 colleges covered, as many as 776 colleges have an enrolment of less than 100. Another 682 range between 100 and 200.) Whatever facilities they want they are usually able to get. Targets in respect of lower levels of education are seldom fulfilled, while in the case of tertiary education, they are always exceeded.

The share of higher education as recently as 1971-72 was a little over 10% of the total expenditure. By 1976-77 it had crossed 14% of the total. What is more revealing however is the importance given to university education in the Fifth Plan allocations. The percentage has gone up to 22.7 of the total education, while what is available to secondary education is only 19.5%. If the figure of technical education (12.1%) is combined with university education (22.7%), the joint total exceeds the outlay on elementary education (31.9%). This indicates the direction in which further expansion is being made.

One would not have much to say about this over-investment in higher and professional education if only our achievements were satisfactory. The situation in this regard, however, is both uneven and unsatisfactory. Though some institutions and individuals have earned international esteem, the number of such persons of whom the country can really be proud is not more than a couple of hundred. Add to that those working in the field of scientific and industrial research and the figure would go up 2-3 times, but it would still not exceed a thousand. Then there is the intermediate sector of a hundred or more university departments and a hundred or so colleges which are doing useful work—the rest of the lot, however, are mediocrities. More than 50% of the colleges referred to above belong to this category.

Power-Hungry Pedagogues

A large number of university departments are manned by people whose principal justification for being there is to have successfully manipulated those who had the authority to appoint them. These people are so numerous and so sleeplessly active in pursuit of their petty ambitions that the good and competent are more or less marginal to the university scene. In case anyone regards this as a piece of exaggeration let him ask himself one question: who sets the tone in these academic institutions? Is it the competent ones or is it the rest (who, though divided among themselves for reasons of conflicting interests, are united in one goal: to keep the decision-making in their hands)? It is out of their ranks that we got the bulk of our

administrators, members of various committees, members of delegations going abroad and such other positions of power and influence.

We have, thus, created two sectors of higher education with very little of interaction between the two: there is an elite group whose achievements are comparable with the best in the world. While it is difficult to quantify, this hardly constitutes 4-5% of the total education effort. The remaining 95% or so oscillate between what may be regarded as reasonably satisfactory to what is hopelessly poor and substandard. To have peaks of excellence is a sound educational idea. In academic terms, therefore, one can defend the existing system. However, those who defend the system overlook the ethos of work that prevails in the majority of the non-elite institutions. It is one of grab as you can and utter contempt for anything like professional standards. What matters is the privileges and power that accrue to individuals in a particular set-up. Neither the quality of work that is done nor the total quantum of output is regarded as relevant considerations. Indeed, it is difficult to imagine a system of education where good performance is underrated to the extent it is our system.

Not only that, the country has devised a whole superstructure to support this system in a variety of ways. Once this is recognised it is possible to understand, for instance, the strategy behind the location of educational institutions, the fee structure that prevails all over the country, the rules of recruitment and promotion of the staff and the financial procedures that govern grants to different types of institutions. Each of these is calculated to promote and expand the system. It is through expansion that more jobs are created and promotions can be ensured. How many people know that teaching today is the largest profession in the country. That in terms of professional awareness there is nothing to be excited about it is another matter.

It would be naive to think that this particular bias in education can be corrected through academic efforts. Nothing short of a major surgery in Indian polity would correct the present imbalance against the poor and the dispossessed. But minor surgery is always possible; indeed it is sometimes advisable. Over the decades the system has developed all kinds of irrationalities which impede its functioning and neither contribute to its efficiency nor to its productivity. Some of them may be referred to here.

Plugging the Wastage

One, if the country is spending more than Rs 2,300 crores per year on education, it stands to reason that some research ought to be done to find out how this money is being spent, how wastage can be avoided and how performance can be improved. At the moment perhaps not even Rs 1 crore is being spent on educational research.

Two, there are gross regional variations in respect of expenditure. Delhi with a population of approximately four million spends almost Rs 65 crores per

year whereas with a population of 56 million does not spend even Rs 105 crores. Of all Indian States, Bihar has the lowest per capita expenditure on education. This is no way to build the country, nor promote social justice.

Three, approximately 40% of the primary schools have only one teacher. However difficult it might be in financial terms, steps have to be taken to remove this major weakness of elementary education.

Four, competent persons are hardly attracted to the teaching profession. To make matters worse, we fail to train them appropriately. This is one of the weakest links in our educational system. Unless positive steps are taken to attract more talent into training colleges the situation will not improve. It may not be a bad idea to offer new entrants into these colleges an additional bonus of 25% which may be guaranteed to them for a period of ten years. Hopefully, it would attract new talent into this grossly neglected sector of education.

In 1947 a substantial number of school-teachers were untrained. During the last three decades a heroic effort was made to train them. Although the Education Commission (1964-66) recognised the seriousness of the problem and recommended a special grant to strengthen training of teachers, very little was achieved and teacher training today continues to be as dismal and uncreative as it used to be.

Vested Interests

Five, while there is some concern for elementary education and considerable interest in higher education, it is secondary education which is most neglected. That apart, there continues to be a running controversy with regard to its duration. With the addition of two years to school education what is required is large-scale transfer of funds from the tertiary sector to the secondary sector. This is however being sabotaged by the vested interests that have grown up over the years. Unless more funds are diverted to secondary education the situation will continue to be critical.

Six, without some kind of an embargo on further expansion at the tertiary level, the structure of education would get dislocated further. To have a situation where more than 50% of the colleges are not even academically viable is utterly irrational.

10,000 Doctors a Year

Seven, the prevalent fee structure is calculated to help the affluent and not the poor. The rational thing to do is to have higher rates of fees and provide for a large number of exemptions in suitable cases. The situation in some of the technical institutions is particularly disquieting. The state spends almost Rs 20,000 per year per medical graduate. All that a student is required to pay is Rs 250-300 per year. Amongst other things, this contributes to the over-production of highly trained manpower. We produce a little over 10,000 doctors per year. Approximately, 4,000 are employed by the Government and the public sector. An equal number or perhaps less than that go into private practice. The rest are

unable to find jobs and it is they who migrate abroad. Whether they stay within the country or go abroad is a matter of personal preference. But when large sums of money are spent to educate these students, one cannot afford to be indifferent to the problem. What is true of medical education is equally true of a number of other professional courses. On technical education alone the country spent Rs 50 crores in 1975-76.

Eight, in the student population of 2.5 million in the tertiary sector we have a large concentration of volatile material. Apart from engaging them in the classroom in a perfunctory sort of way for a couple of hours for (on an average) 100 days in the year, there is little that is done to take care of them. This is bad education as well as bad politics. What is required is an extensive network of student services catering for their different needs and requirements. The country spends approximately Rs 70 crores on the National Cadet Corps (NCC), Rs 3 crores on the National Service Scheme (NSS) and perhaps not even that much on sports. When one takes into account the fact that the whole UGC budget is of no greater magnitude than what is being spent on the NCC, one is taken aback at the irrationality of it. That, in the bargain, sports activities are grievously neglected only goes on to show how different agencies of the Government take decisions on their own and there is little effort at coordinated planning.

Nine, for about fifteen years enrolment in higher education grew at the rate of 13-14% per year. In no country of the world did at any point of history the rate of expansion go beyond 5-6% per year. Unavoidably, therefore, we paid a heavy price in dilution of standards. Nothing else was so much responsible for low standards as the poor quality of teachers who were recruited into the system. What they imparted to their students could obviously not be better than what they were capable of. To improve their professional competence, now that they are in the profession, is therefore a matter of paramount importance. Though this is recognised what is actually being done is woefully inadequate. The current report of the Comptroller and Auditor-General of India, for instance, refers to the fact that in the UGC budget funds for quantitative expansion in the Fourth Plan period (the Fifth Plan is still in progress) were fully utilised but those meant for qualitative improvement, limited as they were, lapsed to the extent of 50%.

The Carrot and the Stick

Ten, above all, good performance should be rewarded and bad performance penalised. What is happening in our educational institutions is that performance, good or bad, is of no consequence. What is important is the connections one makes and the 'mileage' one travels. The whole process of recruitment and promotion is geared to serve this end. Even those teachers who are well motivated, sooner or later degenerate into a state of cynical apathy. More than anything else it is this lack of professional commitment which is corroding the educational institutions from within.

(Courtesy: Illustrated Weekly of India)

Question Choice in Examinations

V. Natarajan

In the 'Examination Reform—A Plan of Action' circulated to all universities in the country, the UGC observed this: "A large body of teachers and educational administrators is not yet fully conscious of the subjectivity, unreliability and lack of validity of the examinations as conducted today". Talking of unreliability, we must clearly understand that the mark given by an examiner is something like a 'raw mark' and it is certainly different from his 'true mark'. Such a raw mark is subject to an error which for some typical papers set at universities (the UGC Report continues) is greater than 5 per cent. This means that when an examiner assigns a mark of 43 the true mark may be either above 48 or below 38 in 50 per cent of the cases. There are many sources of error that contribute to unreliability of our present day examinations. The author* has drawn attention to this and lists the following: a) Error due to subjectivity in marking, b) Error due to biased sampling of topics, c) Error due to biased sampling of abilities d) Error due to allowing students a choice of questions, e) Error due to arbitrary time limits, f) Error due to assumptions in addition of marks. Concluding this section, the author remarks: 'If universities/exam. boards in our country at all levels take steps to indicate along with raw marks in each subject for a student details like mean, standard deviation, reliability coefficient and error in measurement, there will then be no need for any treatment of scores.

It is possible to look at very closely one of the sources of error in traditional essay type examinations that due to allowing students, a choice of questions the presence of question choice in public university examinations of the traditional (essay) kind has been accepted and indeed upheld for many years in India at the University level. The reasons given for the need to allow this choice of questions are many: but two of the most important ones are: (i) it allows the teachers freedom to teach particular portions of the syllabus (in which they may be particularly interested), (2) it allows students to concentrate on particular aspects of topics in which they are able to show themselves to the best of advantage. This has led to the undesirable situation that teachers indulged in dealing with only a few topics in the syllabus leaving the rest for choice and on the other hand students increasingly indulged in 'selective cramming'. Both these have serious implications on teaching-learning, impairing its effectiveness, efficiency, relevance, adequacy and above all purpose. Question choice is still accepted today alongside the adoption of more rigorous methods of examining (e.g. the use of objective items) but little thought seems to have been given to the *problems* raised by allowing a choice of questions or even recognizing the fact that complica-

tions may occur. Some of these problems are presented here. Before presenting the problems, it is as well to remember the basic assumption that is made (albeit implicitly not explicitly) when using an examination where a choice of questions is presented. This assumption is that a candidate will *be able to be compared* with others taking the same examination whatever combination of questions he attempts on an exam paper. This implies a form of 'currency' (or comparability between individual questions) and hence combinations of questions. The viability and validity of this assumption will be explored now.

The Problems and their Effects

(A) **The Syllabus:** It may be asked whether or not syllabus topics (in their own right) are of the same basic level of difficulty. In general, it is unlikely they are, but such an assumption one way or other could be made only on the basis of a consensus of opinion. Let us consider a few examples. In undergraduate mathematics, a quoting of a principle in complex variable and an example by students and a factorization followed by the solution of a pair of simultaneous equations cannot be considered 'equal' in basic level of difficulty. Here we are considering only the content and nothing else. In Geography again, is the description of industrial growth of an area on a par with naming rivers, hills and features on a map? We are now considering basic complex variable as opposed to solution of simultaneous equation and also a knowledge of industrial growth as opposed to the knowledge of a terrain. It is likely that no agreement is reached regarding an answer to this problem. This is not important but what is important is that as long as this difference of opinion in regard to the 'equality' of subject topics exists, then the 'equality' of the results of candidates attempting these questions may be questioned.

(B) **Abilities:** Let us look at these questions in terms of the 'abilities' they purport to test. Some of them may clearly involve memory and only memory. Yet others do involve 'comprehension' while some others deal with 'application' ability being put to test. How far are we justified to put on par a pair of questions that is definitely known to be testing different 'abilities'? Some questions will involve the students to *translate* information given in one form into another (from verbal to graph). Yet some other questions will involve calculations (after recalling a set of formulae, rules, procedures) and infer from these calculations. Granting that the questions test what they intend to test, then these questions in a paper will be testing different 'abilities', and we are *not* justified to permit 'choice' of these questions. It is necessary therefore to group questions of the same category in terms of equality of ability tested with sections and get students to respond to these sec-

*Natarajan V. ---'Monograph on Grading for Universities', AIU, 1976-- PP 35-37.

tions. The restructured pattern* proposed by AIU (and accepted by many universities) involves in every paper:

Part A: Objective type 20 to 40 items/20 to 40 mins/20 to 40 marks

Part B: Short answer type 10 to 15 questions/50 to 90 mins/40 to 60 marks

Part C: Long answer essay type 1 to 3 questions/20 to 60 mins/15 to 30 marks

Part A may have items (M/C, MF, etc.) all of them testing knowledge/comprehension. Part B may have questions, all of them testing Analysis/Application and Part C may have questions all of them testing synthesis/evaluation. In this, it may be noted that there is no choice in Part A/Part B and there may be internal choice in Part C.

(C) The Difficulty of Questions: It has been the practice to allow a choice of questions only in respect of supply type questions whether SA or LA. Where a restructured pattern is in practice, only LA questions give a choice of questions for students. In respect of long answer questions, some of them are inherently more difficult than others. Elsewhere** the author has shown that it is possible to work out a very realistic and accurate difficulty index (or Facility value) for every question in a choice type exam. In fact there are two indices.

$F.V. \text{ index} = 50 + (MQ - MT)$ where MQ = mean percentage mark on the question by those attempting it and MT = mean percentage total mark on the question by those attempting it. This is found to be a 'sample free' technique. If we analyse our choice type exam on this basis, we will come up very quickly that our questions range considerably in F.V. One such analysis is given below:

Choice type exam. with question No. I compulsory and any 5 to be answered in 7 questions. Totally there are 8 questions. Question No. 1 carries 15 marks and question No. II to question No. VIII—10 marks each.

QN NO.	I	II	III	IV	V	VI	VII	VIII
MQ	77.3	71.5	72.8	51.9	15.0	57.5	31.9	61.7
MT	63.13	66.0	63.7	74.3	52.7	63.4	58.8	63.13
$(50 + MQ - MT)$ = F.V.	64.0	55.5	59.1	27.6	12.3	44.1	23.1	48.57

It has been argued that the difficulty of a question (or F.V.) is a function of both different ability groups attempting different questions and also leniency and

*A Restructured Pattern of Exams for Universities', Natarajan V, University News, AIU, Delhi.

**Natarajan V — 'Monograph on Test & Item Analysis for Universities AIU, New Delhi.

severity of marking. Another important thing we are concerned with here is that supposing question III is taken in the above situation (forming a part of the choice exam) and its Facility Value as such compared with its F.V. of the question were to appear in a No Choice exam, we find that different values result. Certainly, 'choice' or 'no choice', different questions have Facility Values. To imagine that they are all equal and to give a *choice* of questions to students is extremely misleading and unjustified to say the least.

(D) Validity: In achievement examinations, we are principally concerned with content validity. It is easily appreciated that 10 questions or so will not be able to cover 100% of the syllabus. Very often the coverage will not exceed 80% of topics. In our traditional papers, the usual practice is to give 10 questions and ask students to answer 5 out of these. Immediately the validity is reduced to 40%. If we set pass mark in this paper as 35 out of 100, it really means that a person who has mastered just $0.35 \times 40 = 14\%$ of syllabus is declared passed. In contrast to this situation, we consider our restructured pattern:

Part A 20 to 40 items
Part B 10 to 15 questions } No choice

and Part C 1 to 3 questions with *internal* choice, if any, then it can be seen that at the first place, the content validity of the paper is considerably increased say 90 to 95% and almost all questions are compulsory. Thereby, the validity remains more or less 90%. It is also usual practice to increase the minimum marks for a pass to 40 or very often 50 in such a restructured paper. The overall validity for passing comes out to 45% as opposed to 14%.

(E) Reliability: When we consider the reliability of a choice type examination compared to that of a no choice type, many things can be said. The overall reliability or the index of measurement efficiency is very high in a no choice type, since the number of items are more and the ratio of error variance to observed variance is very small. The internal consis-

tency reliability of a no choice is also more than that of a corresponding choice type examination. However, it must be said that it is much more complicated to calculate reliability of a choice type compared to no choice type.

(F) Uniformity: 5 questions out of 10 can be
(Continued on page 561)

Implications of the New Pattern of Education

V. S. Mathur*

The type of education needed for a country depends largely on its national goals and objectives. A healthy education system should support and perpetuate the values of society. It was, therefore, natural that with the coming of independence, the goals of Indian Society and also naturally the goals of the Indian Education system should have undergone a change. The Indian Constitution provides the national objectives of Equality of Educational Opportunity as well as universal elementary education. Nobody can be denied the right of education, elementary, secondary as well as higher education.

Equality of educational opportunity does not mean uniformity in the content and variety of education to be provided to all the individuals. It is only common-sense that any sensible educational system should cater to the individual needs and potentialities and aptitudes. All those who come out for such an education system should be in a position to make their contribution towards national development.

The Retrospect

The education system initiated by the British in 1835 as a result of the Macaulay's Minute was designed to meet the very narrow requirement of administration. It was also unfortunately linked up with government employment. Besides being purely bookish and academic, it had the disadvantage of being imparted through the medium of a foreign language. And above all, it was meant for a small minority of the population because the foreign ruler was not interested in education for the sake of education or in education as an instrument of social change.

Attempts have been made in free India to modify the educational system in such a way that it is able to meet the essential requirements in larger measures. In 1948-49 the University Education Commission went into the problem of Higher Education under the inspiring leadership of Dr. Radhakrishnan. Amongst other recommendations they suggested a Eleven Year or Twelve Year Higher Secondary Course followed by a Three Year Degree Course.

In 1952-54 another Commission went into the problem of Secondary Education and as a result of its recommendations the Eleven Year Higher Secondary Course of a diversified nature was initiated followed by a Three Year Degree Course. The idea was to provide a number of streams after a delta stage. However, unlike as planned, a majority of the students opted for academic courses leading to the university and the idea of a large number of young people opting for professional courses, did not materialise.

The entire position was again reviewed by the National Education Commission during 1964-66. It was observed that at that time four main patterns of school and college education were prevalent in the country:

- (1) In Kerala the pattern of $10+2+3$ had been adopted, with the two-year stage being located in junior colleges.
- (2) The pattern of $10+2+3$ prevailed only in Uttar Pradesh.
- (3) The pattern of $11+3$ prevailed in the Delhi Union Territory and the State of Madhya Pradesh.
- (4) In other states two parallel systems prevailed:
 - (a) $10+1+3$ and
 - (b) $11+3$.

There was some vocationalisation in the 11-year course, but enrolment to such courses was meagre.

The New Pattern

This chaotic situation was found to be most unsatisfactory and the Commission was emphatic in its recommendation that a uniform $10+2+3$ school and college system would not only bring about the desired educational uniformity in the whole country but may also meet the requirements of the individual and those of the society. This recommendation was studied thoroughly by the various agencies in 1968. The National Educational Policy Resolution accepted the above recommendation and this was later on also commended by the Central Advisory Board for Education for countrywide implementation.

According to the new pattern the school stage consists of:

- (a) Ten Year common schooling and
- (b) Two Year Higher Secondary Course.

This was to be followed by a Three Year Degree Course. It was envisaged that every effort should be made to vocationalise the $+2$ stage and it was visualised that more than 50 per cent of the students would opt for vocational courses. These courses were to be so designed that the candidate could thereafter either go on to higher professional courses or go in for jobs.

The pattern is being introduced in most of the States although things do not seem to be very clear about the $+2$ stage.

Ten Year Schooling

The N.C.E.R.T. was quick to evolve the framework of the curriculum for the Ten Year Schooling.

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The same was accepted at a consensus in August, 1975. The main features of their scheme are:

- (a) The three language formula has been implemented with sincerity all through.
- (b) Science and Mathematics have been made compulsory upto Class 10th. The curriculum has been so devised as to help to productivity and prepare the children for competent participation in the various national tasks.
- (c) Work experience has been included as a compulsory activity at all levels. It is hoped that this should provide learning opportunities to the children besides augmenting social and productive outlook.
- (d) Art, Drawing and Painting have also been included as compulsory subjects with a view to develop aesthetic and artistic taste among children.
- (e) Games and Physical Education have also been made compulsory.

Out of these, work experience, arts and games are to be evaluated internally.

Work experience has been advocated in the past also for two reasons. Firstly, it has been felt that work is the greatest social equaliser and secondly that work experience helps to make education useful in practical life. It is envisaged that every institution would select four or five work items most suitable to the locality and catering to the potentialities of the students. It is also accepted that work experience will be no blind alley but will be followed by vocational streams in the 11th and 12th classes.

The Central Board of Secondary Education has suggested a large number of work experience items and it is expected that organisations/institutions may also think out their own items included in the list.

India is an agricultural country and it is expected that schools would largely go in for items like agriculture, gardening, horticulture, floriculture and such like items according to the situation. Six periods per week have been allotted for work experience including both theory and practical, although emphasis will be more on practical work.

In order to make work experience in agriculture more effective, it will be better if at least one properly trained agriculture teacher is provided in every school. During the interim period, science teachers with Botany as one of their subjects may be properly reoriented.

Every school, as far as possible, will have to be given some land and some agricultural facilities to carry out work experience in agricultural items. Wherever it is not possible to provide, technical facilities help could be taken from a nearby farm. There should be no problem of attaching small farms to the schools in rural and semi-rural areas. The syllabus in agriculture and allied items should be so framed that most of the important items of agriculture and allied areas are included.

Further it is very necessary that the same work experience items be continued from class to class so that when a child completes the Ten Year Schooling,

he is in a position to have good knowledge both theoretically and practically about his area of interest.

In the matter of re-orienting teachers to agricultural items, help should be taken from the various agriculture colleges as well as from the various University Departments/Complexes in agriculture maintained by them. The agricultural universities and colleges are duty bound to help not only in orienting teachers but also in providing in-service education for teachers already trained in agriculture. It may be further advantage if the universities and agriculture colleges share their know-how and their equipment with the neighbouring institutions.

+2 Stage

The +2 stage is the crucial stage in the new pattern and it has to be planned and handled with care and caution. The main thrust at this stage is on vocationalisation. As the first step, it is necessary to have a survey of the employment pattern and the needs of the local community. It will be idle to have vocational courses without judging their economic relevance to the locality. When we think of vocationalising higher secondary education, we automatically are confronted with questions such as how will this differ from vocational education imparted in some of our vocational training colleges and polytechnics as well as in agriculture colleges etc.

It has to be understood at once that vocational education at the +2 stage goes as an inbuilt component of general education. The Two Year vocational courses may roughly be divided into about 30 per cent general content and 70 per cent professional content including practical work.

The courses have to be so designed that they should be self-sufficient for those who want to join a profession as also for those who want to pursue higher professional studies. They should be able to provide the necessary background. The products of this system should be acceptable to the consumer. In subjects like agriculture it may be better to have a family of vocations from which courses may be selected to develop a broader base and to help in future adoption of careers from a wider field.

The +2 stage will according to present thinking, be a part of the school. This can be done in two ways either by adding vocational courses to an ordinary high school or by converting the existing agriculture schools and other vocational centres into higher secondary schools by adding a few academic courses.

In order to have smooth running of such courses sharing of know-how and equipment, between the school system and the universities and colleges especially with the faculties of agriculture, engineering, business management etc. comes necessary. It also becomes very natural that vocationalisation of education at the secondary stage be treated as a cooperative endeavour between the various departments and institutions functioning in every State and in the various localities.

Another important problem that we will have to face is to have an adequate number of vocational

teachers. It may be better if one of the top persons that is either the Principal or the Vice-Principal is a technical person. In subjects like agriculture it may be feasible to borrow the services of suitable trained persons from the agriculture departments. In certain cases help could be taken from an enlightened farmer or horticulturist functioning locally. In many cases suitable institutions like agriculture colleges, departments of agriculture in universities, agriculture universities etc. will have to take up the responsibility for training suitable teachers and also for initiating inservice programmes at regular intervals.

Then there is the question of evaluation at the vocational levels. The NCERT has suggested the semester system as well as a system of grades and credits. There is also provision for shifting to other streams through bridge courses. Bridge courses will also have to be provided for those wanting to go in for higher education at a later stage.

The academic courses will also have to be enriched in content and depth so as to provide strong background for the +3 stage in the colleges and the universities. Some work orientation has to be included in the academic courses also mainly as hobbies. These will have to be creative in nature and not mechanical.

+3 Stage

The introduction of 3-Year Degree Courses after 12-Year schooling is intended to upgrade the degree courses specially in areas where the first degree was hitherto given after 14 years. Even the content in areas already having 15 year courses, will have to be enriched sufficiently. The +3 stage will have to provide a strong base for research. Some screening will

have to be made an integral part of any suitable admission procedures for the +3 stage. Automatic admissions will defeat the very philosophy.

The ad hoc via media of instituting 2-year pass degree courses and 3-Year Honours Courses, suggested in some quarters seems to be a poor compromise and may put some people at a disadvantage. We have to urgently think of regular 3-Year Degree Courses and work towards that end.

Then the question arises that what will happen to those who come out of +2 academic courses but who either don't join the +3 stage and those who are found unfit for admission. They will have to be absorbed in certain jobs or given opportunities to go in for semi-technical courses like stenography etc. So far no attention has been given to this aspect. Akin to this is proper provision for those who are not in a position to continue studies after the 10-Year schooling. These questions have to be answered immediately to avoid chaos and frustration.

It must be realised at once that vocationalisation is intended to be a major dimension of the new school education system and it will not be possible to achieve it without initiating significant structural and functional changes in the whole set up. Much will also depend on instructional materials to be developed pertaining to the various courses. And above all, there has to be a freshness and flexibility in the entire system. It may also be worthwhile to give a second thought to the employment procedures prevalent in the country. And above all teacher education procedures have to be revamped. There is need to proceed with sagacity and caution. We cannot play with a thing, like education. The new pattern is not arithmetic. □

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Asoka Rock edicts discovered in Bellary

(From Our Special Correspondent)

Nittur, a village on the south-western bank of the Tungabhadra in Siruguppa taluk of Bellary district in Karnataka, has been put on the map of the Mauryan Empire by the discovery of two edicts issued by Emperor Asoka (3rd century B.C.).

The edicts were discovered recently by Dr. S. Settar, Professor of History and Archaeology in Karnatak University and Director of the Institute of Indian Art History, Dharwar, and his colleague, Dr. S. Rajasekhara.

The edicts, carved on pink rockboulders, closely resemble the

I, runs into six lines covering a space of about 19 ft. The height of the edict is about 4 ft. The second edict (Nittur II) runs into five lines and covers the rock surface of about 20 ft. The height of this record is about 3 ft. The records are partly damaged by weathering. The two edicts are about 50 ft apart.

Dr. Settar and Dr. Rajasekhara, assisted by two research assistants, have just completed deciphering the edicts which, they feel, bridges the gap that existed till now between the Neolithic (10th-8th century B.C.) and Satavahana (1st century B.C.) periods.

Roorkee introduces letter grade system

A system of evaluating the performance of students, described as letter-grade system, is being progressively introduced in the University of Roorkee. It will replace the conventional evaluation on the basis of which successful examinees are categorised into first, second and third divisions. The letter grade system will be introduced from the next academic session from the first to the last year of each course of study in the university and the examination results of all students would be graded by symbols A, B, C, D or F—A standing for excellent, B for very good, C for good, D for satisfactory and F for fail. The grading will be related to the total percentage of marks in a given subject by an absolute and a relative standard. According to absolute standard the grades will be—80 per cent marks or above—'A' Grade; 65 to less than 80 per cent marks—'B' Grade; 50 to less than 65 per cent marks—'C' Grade; 35 to less than 50 per cent marks—'D' Grade; and below 35 per cent marks—'F' Grade.

The relative standard will be based on the mean and standard deviation of percentages at different examinations. Ordinarily the percentage weight to semester examination and sessional work done during the semester would be 50:50. At the end of each semester, every student will be communicated his semester grade point average—four grade points standing for 'A' grade, three for 'B' grade, two for 'C' grade, one for 'D' grade and zero for 'F' grade.

Similarly yearly and cumulative grade point average will be communicated to all students at the end of each academic year. For a month after the declaration of results, a student will have the option to request for re-checking his answer scripts of the semester examination of a particular subject and re-assessment of his letter grade.

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minor rock edicts issued by the Mauryan Emperor in 3rd century B.C. and preach "Dhamma." According to Dr. Settar, a unique feature of these records is that both mention the name "Raia Asoka", a fact which was confined to only two records, one of them being at Maski in Raichur district of Karnataka, so far. Of more than 30 edicts of Asoka found so far, only two refer to him by name, while the rest refer to him as "Devanampiya-Piyadasi." The inscriptions now found add two more instances to the name "Asoka", he said.

Dr. Settar says that these records are written in Brahmi script, measuring about six inches in height. The first record, named, Nittur

One of the edicts is addressed to the frontier subjects of the Mauryan Empire. Asoka commands that, after 256 days of pilgrimage and after spending two and a half years as 'Upasaka' (worshipper), he would like it to be known that the attainment of the state of godhood is not only reached by a person of high rank alone but, indeed, even a lowly person can attain the great heaven if he is zealous.

The second inscription is primarily concerned with the propagation of the socio-religious mission called 'porana-pokiti' (the ancient rule). Reverence to father, mother and elders are specified. Both inscriptions are in Prakrit language.

Osmania dental college upgraded

The dental wing attached to the Osmania Medical College would soon be upgraded to a full-fledged dental College. This announcement was made by Mr. K. Rajamallu, Health Minister of Andhra Pradesh while speaking at the inaugural function of the dental health week. The Minister said that the college block would be constructed soon. The college would have 33 seats of which 5 would be allotted to the Government of India and the remaining seats would be divided among three universities in the State. Every year 15 dental graduates would be given employment in the State. All specialities including dental would be provided in all district headquarter hospitals, taluk hospitals and primary health centres so that the medical aid reached nearer to the masses.

Centre for problems of Harijans

A centre of socio-economic studies is proposed to be established in Madras as a memorial to Sardar Patel. The centre, while collaborating with similar bodies in other parts of the country, will concentrate on socio-economic problems of the weaker sections of the society, especially Harijans, and the peasantry. Dr. V. Shanmugasundaram, Professor of Economics, Madras University, will be the honorary director of the centre.

Ecological planning of the Western Ghats

The National Committee on Environmental Planning and Coordination has set up a task force for the proper ecological planning of the Western Ghat region. The ecological stability of the region, extending from the southernmost part of Gujarat right down to Kanyakumari, parallel to the west coast, is considered crucial to the economy of Indian peninsula. The ecological stability of the region depends mainly on the maintenance

of the forest cover and that cover is now being seriously threatened by agricultural, mining, hydel, irrigation and industrial projects. Consequently, one of the efforts of the task force would be to render advice regarding location of such projects so that their undesirable impact on ecology could be minimised. It could also suggest positive ways and means for maintenance of the tree cover and other ecological elements. The climate, topography and soils of the Western Ghat region are best suited for forestry which needs organised efforts for its development. In this context the project of the World Bank forestry developments started three years ago in the districts of Maharashtra have assumed a special significance.

National fellowship for Dr. Ganguli

Dr. Anil Kumar Ganguli, Director, Chemical Group of the Bhabha Atomic Research Centre (BARC) has been selected for the award of National Fellowship on Environmental Sciences by the Department of Science and Technology.

The fellowship was instituted recently by the department on the recommendation of the National Committee on Environmental Planning and Coordination.

Dr. Ganguli has been responsible for developing environmental safety programmes for atomic energy operations in India. He will conduct research during the two years' fellowship on environmental sciences, particularly on application of nuclear techniques and prediction modeling investigations on the movement of aquatic and crystal material of earth's surface and study of industry and environment.

The fellowship carries payment of Rs. 2,500 per month for two years. In addition, the fellow will be paid Rs. 10,000 per year for research work and Rs 5,000 towards contingent expenses.

Dhanvantari award for Dr. Mody

Dr. M.B. Mody, 78-year old doyan of chest physicians in

Bombay has been awarded the Dhanvantari Award for being the outstanding medical man of the year by the Dhanvantari Foundation.

The award was instituted by the foundation in 1973. Dr. Rustom Jal Vakil was the first recipient. Last year the award was presented to the eminent surgeon Dr Shantilal J. Mehta. The award this year would be presented on 6th November in Bombay. A symposium on "Cancer—a challenge to medical science" will also be organised on this occasion. Dr. J.C. Paymaster will be the moderator of the seminar.

Dr. Mody has spent over half a century alleviating human sufferings with a missionary zeal. He is the Patron President of the International Conference on International Medicine.

Education-oriented jobs

Dr. P. C. Chunder while inaugurating the special mid-term conference of the Boards of Secondary Education in India in Madras said that in addition to job-oriented education, provision must be made for education-oriented jobs whereby drop-outs from the school can contribute to family income and also continue their education. The Minister informed that the interim report of the review committee to scrutinise the syllabi of secondary education had been submitted in the Ministry of Education and the full report was expected in another month's time. Dr. Chunder said that the study load on secondary education pupils was very heavy. He was tempted to ask "why burden the students in their few hours at school with facts and figures" when many other media for learning, such as newspapers, radio, T.V were available. The fault lay with the system since development of self-expression was impeded by too many subjects being in the syllabi.

Dr. Chunder discouraged too much insistence on bookish learning which has to be brought down if the total personality of the child was to be developed. Referring to new mathematics, he said he shudder-

ed whenever he looked at the new mathematics text books. In U.S.A. there were second thought about this subject because some parents had complained that they had to send their children for psychiatric treatment on account of new mathematics. The Minister said that he had no objection to students going in for engineering subjects taking up new mathematics. The syllabus and subjects must be related to the needs of the students and there was no point in making all students study certain subjects. We must offer choice to students why should we be afraid of doing so. He said after a few years of general study there must be scope for specialisation.

Dr. Chunder regretted that many students at the college level lacked essential skills like communication ability and language proficiency. Education was linked with life and as life changed, education must also change. A child even before going to the school had certain ideas planted in his head and we can perceive the seeds in the early years, they germinate in the primary schools, shoot the trunks in secondary schools after which branches could be developed. Dr. Chunder referred to the new debate on education throughout the country and said education cannot depend on the whim of a particular individual or group of individuals and in a big country like India it might not be possible or desirable to have uniformity.

The same types of problems as in our country could be found at the international level, Dr. Chunder pointed out referring to his recent visit to Switzerland for attending the Unesco Conference. Throughout the world it was accepted that education must be related to life and our policies ought to be flexible. This did not mean that there should be total anarchy. A human approach to education to meet the basic needs of man was required.

Referring to the 10+2+3 pattern of education, Dr. Chunder said that the terms like school final, higher secondary can as well be used, he added. He warned

that the whole system would be a total failure if the product of education was either unemployed or unemployable, whatever be the period of education.

The Tamil Nadu Education Minister, Mr. C. Aranganayagan referred to the need to consult the professional teacher in matters related to education. He said education was a great leveller and it was upto educationists to usher in the millenium for the masses. The importance of work-based education was also stressed by him. Mr. C. G. Rangabashyam, Education Secretary of Tamil Nadu urged the delegates to draw up schemes which would dovetail the drop-outs in the educational system. He would strongly commend the method of multiple point entry and the objective of universalisation of primary education. Vocationalisation in the higher secondary stage should not be only at the theoretical stage but concrete methods should be thought of.

Incentives for top rank graduates

Graduates obtaining top position in various faculties of the four universities in Karnataka would receive a cash award of Rs 1,000 each from the State Youth Services Board annually. The Director of Youth Services, Mr. Jogendar Singh while making this announcement said that the Board has set aside Rs. 75,000 annually for this purpose.

Bombay to introduce M. S. in cancer science

The University of Bombay will be the first in Asia to introduce the Master of Surgery Degree Course in Oncology (Science of cancer) from the next academic year. Dr. D. J. Jussawalla, eminent cancer specialist and Director of Tata Memorial Centre, said that it was high time that a separate cancer department was opened in the medical colleges in the country for teaching of oncology. In none of the Asian countries except Japan the medical colleges have a separate department for the teaching in cancer sciences.

Osmania medical college plans for golden jubilee

The Osmania Medical College would be celebrating the golden jubilee in November 1977. Dr. G. Narsing Rao, Principal of the college said that it is proposed to build a guest house at a cost of Rupees two lakhs to mark the golden jubilee celebrations of the college. It was also proposed to conduct annual operation programme on scientific subjects and to diversify the research activities. An inter-medical college sports festival would be held in Hyderabad as part of the jubilee celebrations. An inter-medical college youth festival would also be organised in which medical students from all over the country would participate. The college is currently organising exhibition showing the latest developments in the sphere of medical health and family welfare programmes.

Reddy stresses the role of research work

Prof. G. Ram Reddy, Vice-Chancellor of Osmania University, while inaugurating "Vivek" a forum for teachers and research scholars sponsored by the Hindi Department of the University said that the research scholars had developed certain wrong notions about their work. Prof. Reddy said research is a science and deprecated the tendency on the part of students going for research work just for the sake of obtaining degrees. He stressed the need to widen the base of research work and wanted the academician not to take a narrow view of the research. He pleaded for inter-disciplinary approach to research and literature.

Reserved seats for handicapped

Dr. P.C. Chunder, Union Minister for Education and Social Welfare has made an appeal to the Vice-Chancellors of the universities all over the country to reserve three percent of their seats for physically handicapped students. Under this category, the blind, deaf and orthopaedically handi-

capped students would be covered. Dr. Chunder, the Education Minister, has further assured the universities that the Centre would give cent per cent assistance to the universities for the education of the handicapped students under the Centrally sponsored scheme of integrated educational programme.

Medical university proposed for U.P.

Mr. Kalyan Singh, the Health Minister of Uttar Pradesh announced in the State Assembly that the Government was considering the proposal to establish a medical university. Its syllabus would embrace the different prevalent systems like allopathy, homoeopathy, ayurveda, unani and naturopathy. There was a dearth of both male and female doctors in the state. The establishment of a medical university would therefore be a welcome step. Efforts are also being made by the government so that no hospital remained without a doctor in the near future.

Patna institutes business management courses

The diploma course in Business Management was inaugurated by Dr. A.K. Dhan, Vice-Chancellor of Patna University at the Darbhanga House. The course is being sponsored by the Postgraduate Department of Applied Economics and Commerce of the university. Dr. Dhan said that the students joining the course should fully utilise their knowledge not for their own gain but for making an improvement in the trade and commerce of the country. Though it was a job-oriented education, its objective should be to improve the methods of business in every respect and for expanding the scope for industrial development. The Vice-Chancellor hoped that the trainees would develop into good entrepreneurs and would start new enterprises in order to increase the existing flow of goods and services in the country.

Dr. N.L. Nadda, Head of the Postgraduate Department of Applied Economics and Commerce

explained the importance of the course. He said that the self-paying course launched by the department had attracted over 1200 applications for enrolment. The Faculty of Commerce had now prepared a full-fledged scheme of Master's course in Business Management which is being considered by the Regulations Committee of the university. He hoped that the course would be instituted soon and would be the first of its kind in the State. In order to meet the requirements of the growing faculty of commerce, he pleaded for a separate campus where the training school premises could also be located.

Principles of management, planning, coordination, organisation, control, communication, managerial economics, management accounting, financial management, personnel management etc. would be covered under the one-year diploma course.

Punjab releases Rs. 97 lakhs to meet UGC grade arrears

The Punjab Education Minister, Mr. Sukhjinder Singh announced in Chandigarh recently that the University Grants Commission grade arrears of about Rs 97.24 lakhs would be paid to the universities and government and non-government colleges for the period April 1, 1975 to March 31, 1977 in spite of the financial constraints. The grants would be continued during the financial year. More than 4,000 teachers of 35 government colleges and 125 private colleges affiliated to the Guru Nanak Dev and Punjabi Universities would be benefited by the release of these grants.

The Government has also agreed to release the new UGC grades to all principals and lecturers including those of privately-affiliated colleges in the State with effect from January 1, 1973.

U.P. allows students' unions in colleges

The Uttar Pradesh Government has decided to allow the college

students to form their Chhatra Parishads (Students Union) as such co-curricular activities have a special role in achieving overall development of students. With this object in view, associations relating to various subjects and different kinds of clubs etc. have also been permitted to operate so that full opportunity is provided to students to develop their talents. Those students who desire to become members of Chhatra Parishad can do so voluntarily. The office bearers of Chhatra Parishad can also voluntarily raise subscriptions from amongst their members for carrying out the activities of the Parishad. Accounts in regard to this subscription may be kept by them separately. The Head of the Institution can as Patron, provide necessary guidance to the Chhatra Parishad.

Common curricula for Bihar universities

All the universities in Bihar will soon have a common curriculum in the Faculties of Law, Engineering and Medical education from the next academic session. This decision was taken at a meeting of the Vice-Chancellors of different universities held under the auspices of Bihar State Inter-University Board. The vice-chancellors discussed the recommendations of the different committees on curriculum changes set up by the board. The recommendations relating to changes in law, engineering and medical education were accepted by the vice-chancellors. The curricula in these faculties had been revised according to the guidelines laid down by the Indian Bar Council and Indian Medical Council and other national bodies.

New site for Narendra Dev University

Narendra Dev University of Agriculture and Technology has failed to locate a suitable campus site. The university was to acquire a campus of its own. Different proposals have been suggested in this regard. The State Government initially has proposed a site

near Masodha about 7 kms from Faizabad city. But recently on re-thinking the site near Kumarganj village situated at a distance of 40 kms was developed for this purpose. Dr. M.S. Randhawa recently visited the university and he has given his preference for the site near Masodha.

Plea for Indianising universities

Prof. Ram Joshi, Vice-Chancellor of Bombay University, said in Bombay that universities should Indianise themselves in order to tackle problems facing the country. He was speaking at the seminar on education organised by the Somaiya College of Arts and Science in celebration of the Bombay University's 120th anniversary. Prof. Joshi said that higher education in India is still being modelled on London School of Economics and Universities like Oxford and Cambridge. These institutions are alien in our context. Prof. Joshi felt that universities all over the country were in the midst of an "identity crisis" and were groping in the dark to discover themselves. The entire system, the examinations, syllabi and the teaching is out of date.

The State Education Minister, Mrs. Pratibha Patil said that the new education system was in keeping with the needs of society and had been based on advice by experts and it was in keeping with the national policy. She said that vocational courses had not been introduced at the plus two stage because of the financial constraints. She hoped that they would be incorporated when more resources were available. Dr. Madhuri Shah, Vice-Chancellor, SNDT Women's University said that women still went to the traditional faculties of study. Dr. Shah said that the humanistic aspect and individual inspirations had always been neglected in education.

UNESCO Conference on Environmental Education

Inter-governmental Conference on Environmental Education

would be held in Tbilisi, Russia from October 14 to 26, 1977. Dr. (Smt.) Madhuri R. Shah, Vice-Chancellor, S.N.D.T. Women's University, Bombay would represent the Government of India at the conference. The purpose of this conference is to make recommendations concerning measures which can be envisaged at the national, regional and international levels to promote education in this very important but hitherto neglected field. This is of vital importance for the health and well-being of mankind.

Dr. Madhuri Shah will discuss major environmental problems in contemporary society, the current efforts made in this direction, the role of education is facing the challenges of environmental education through both formal and non-formal channels, and the strategies for development of such programmes at the national level. The needs and modalities for regional, international cooperation for the development of environmental education is also an important item on the agenda of the conference.

Means and measures to reinforce UNESCO's current efforts in the field of environmental education in the framework of the country's own educational programmes, the potential contribution of activities in the field of the natural sciences, the social sciences, culture and communication will be discussed and planned out.

AIFUCTO deputation meets Dr. Chunder

Dr. P.C. Chunder, Union Education Minister, received a deputation of All-India Federation of University and College Teachers Organisation recently in New Delhi. He informed the teachers that the University Grants Commission has now allowed the universities to decide about the remuneration to be paid to examiners in accordance with the local conditions prevailing at different places.

The deputationists however re-emphasised their demand for the enforcement of the statutory security of services for teachers. It

was pointed out that Punjab and West Bengal governments have already provided such a cover to their teachers. The deputationists also urged the Minister to either request all the State Governments to introduce similar legislations or introduce such a measure in the Parliament. Dr. Chunder said that constitutionally it would not be advisable to do so as it could not be taken for granted that education would continue to be on the concurrent list, since the future of the 42nd constitutional amendment was still under consideration.

The deputationists also wanted to put special stress on the representation of their federation and other national teacher organisations on all important academic bodies beginning with the University Grants Commission. Though eminent teachers were now represented in that body but the teaching bodies were not given proper representation. They wanted elected teachers also to be adequately represented on the boards of colleges and universities. The elected members should constitute the majority of these bodies and not the ex-officio members as was the case now. The Federation also wanted representation for teachers, students and non-teaching employees on such bodies. The Minister agreed that there was a need for reduction in the number of nominated members in such bodies but whether the elected elements of teachers should form the majority was still an open question.

Other issues discussed were: direct payment to teachers of all their emoluments by the Government and upgrading of scales of directors of physical education and librarians so that there was a parity of scales with those of teachers. The Minister assured that he would take up these matters with the University Grants Commission.

Corrigendum

In the last issue of University News, the item on page No. 532 may be read as Bio-sciences Department inaugurated at Vallabh Vidyanagar instead of at Surat.

Radhakrishnan Study Centres

Prof. K.S. Murti, Vice-Chancellor, Sri Venkateswara University has made a proposal to set up Dr. Radhakrishnan Study Centres in different parts of the country. Efforts have been made at the unofficial level to establish such centres attached to Calcutta, Madras, Mysore, Andhra and some other universities for study and research on subjects in which the former President of India was interested.

Prof. Satchidananda Murti was inaugurating the 19th All-India Seminar on the Philosophy of

Dr. Radhakrishnan in connection with the golden jubilee of the Philosophy Department of the Madras University. Prof. Murti explained at length the contributions of Dr. Radhakrishnan in restoring spiritual values. In this process he said that Dr. Radhakrishnan influenced the realms of politics, education and administration by his innumerable lectures.

Dr. Radhakrishnan did not belong to a particular school of philosophy. His writings covered a wide range of thought

and streams. He was interested in the philosophy of cultures. He had made valuable observations on dialectical materialism and laid emphasis on democracy and socialism. Prof. Murti called upon philosophers to tackle the problems posed by science and technology. He felt that the individual should not be the object of change but the instrument for bringing about changes. He stressed the need for injecting ethical values into the daily life of the nation. A spiritual, and not political revolution should bring about changes leading to a life of austerity and simplicity expounded by Gandhiji and others.

Question Choice in Examinations

(Continued from page 552)

chosen in $10C_5 = 252$ different ways. There is in fact 252 different combinations in different papers. Performances by students in this situation can *never* be compared. There is uniform injustice shown to students.

Some of the problems (and their effects) relevant to allowing a choice of questions on examination papers have been presented here. At the same time it has been demonstrated that as far as *all* the problems are concerned, different rules will apply to different candidates since they all attempt different combinations of questions. The syllabus content, the ability, facility value are all bound to *affect* the marks of those taking it; in the situation where choice is presented, however, depending on the combinations, these factors will have an (*unknown differential*) effect. It is this unknown effect working in a different manner from one student to another that causes the greatest uncertainty in accepting the results from a choice type exam.

From time to time, certain ad hoc solutions have been suggested for this problem. The earliest one to be adopted was to have the paper divided into sections and choice allowed within sections. Another way is to have a question or two as compulsory and a marginal choice (5 out of 7 or 4 out of 6) given. Another method tried was to keep certain questions starred and others free. Students may be asked to attempt starred questions for at least 2/3rds maximum marks and the rest only from unstarred. All these 'ad hoc' solutions have a serious limitation. They have all involved traditional type (essay) and a fewer number of questions. A rational and scientific way is to restructure the examination as discussed early in this paper. This alone would bring in improved validity, reliability, relevance and meaning

into the process of evaluation of student performance. To implement this restructured pattern, the Chairman, Boards of Studies in different subjects together with his members must be given the orientation and training to enable them to take decisions on patterns. However, it must be said that within the rigid framework, there is flexibility. Rigidity is to be understood in terms of Part A—objective type, Part B—Short answer type and Part C—Long answer/problem solving being common for all subject areas but flexibility is there for different Boards in the decision of the number of items, duration of parts and marks allotted to parts. A pattern for different subjects at undergraduate and at Postgraduate levels adopted in one university was sent to many universities to suggest modifications and the consensus arrived published in the form of an article.*

In a typical subject the pattern may be:-

Part A: Objective type (Mostly M/C and M/F)
30 items for 30 minutes and 30 marks

Part B: 12 S.A. questions for 90 minutes and 50 marks

Part C: 2 L.A. questions for 60 minutes and 20 marks

In this pattern, the total number of questions to be answered by a student is 44. With 44 questions, the content validity of the paper is very high. There is objectivity in marking Part A and Part B. There is however an element of subjectivity in Part C marking. At the same time, the overall reliability of the whole exam is very high. There is relevance; there is meaningfulness, there is purpose above all better validity and reliability. In addition to all these, such decisions about the pattern by Boards of Studies will have far reaching implications—indeed this decision of pattern will influence the nature and kind of Question Banking, the relative weightages of internal and external and above all science and rationality in our evaluation of student performance. □

*Natarajan V—"A Restructured pattern of exams for Universities", University News, AIU.

Language Convention at Calcutta

(From Our Special Correspondent)

A two-day All-India convention on languages was organised by the National Committee for Linguistic and Communal Harmony. Mr P. Ramachandran, Minister for Energy, inaugurated the convention.

Mr Ramachandran in his opening speech said that there was an 'indisputable case' for a 'national language from the stand-points of 'national esteem' and national unity'. Hindi was spoken by the largest number of people in the country and was 'relatively simple', but evolution of a national language could only be gradual. "Given time, sound dissemination and enlightened self-interest, the national language can come into its own", he said. Simultaneously, conditions must be created, for the flowering of regional languages. The role of English could not be denied and it was indispensable as a 'library language, link language or associate language.' Mr. Ramachandran held that a three-language formula would be in the best interests of the nation, provided it was implemented "in the right spirit specially in the Hindi-speaking areas". However, he regarded 'a process of social education' as the best solution to the problem.

Mr. Sankar Prasad Mitra, Chief Justice of Calcutta High Court suggested that, in the present stage of development, Hindi speaking areas needed urgent promotion of the English language and a road to a 'brighter future' would be blocked if Hindi was immediately made the language of administration and the medium of higher education.

The other speakers were Dr S.K. Mukherjee, Vice-Chancellor of Calcutta University, Mr Ajit Dutta, former Advocate-General of West Bengal. Mr. Samar Guha, M.P. and Mr Ashoke Krishna Dutta, M.P.

The convention arrived at a consensus that :

- (a) English should continue to be used for all official purposes till Hindi is accepted volun-

tarily by the non-Hindi-speaking States.

- (b) It affirmed its commitment to the constitutional provision that Hindi remains the official language of the Union and the form of Indian numerals is used for official purposes.
- (c) It drew the attention of the Centre and the State governments to the official Languages Act which stated that all communications between Hindi and non-Hindi speaking states should be accompanied by an English translation.
- (d) The convention endorsed the view that the mother tongue should be the medium of instruction up to the secondary stage.
- (e) Either English should be the medium of the postgraduate level or proficiency in the language should be essential for a postgraduate degree for the maintenance of academic standards.
- (f) Regional languages (fifteen in numbers) should be developed with care so that it will be adequate to serve as the language of administration and medium of instruction in all stages.

Addressing the concluding session, Mr. Jyoti Basu, Chief Minister of West Bengal said that imposition of Hindi will only create disunity and contrarily it should be given enough time to evolve into a link language.

The convention noted that some quarters were deviating from the accepted principle of 'three-language formula' and so urged the people and institutions to cultivate a catholicity of approach towards all languages including Hindi, for the sake of linguistic harmony.

The Chief Minister referring to this problem prompted that Education should be given priority and not the language formula. Conventions should be held to examine all aspects of the issue, he concluded.

Problems of desertification

Dr. M.S. Swaminathan, Director-General of the Indian Council of Agricultural Research has emphasised the need to halt desertification. In India 12 per cent of the total land covering parts of Rajasthan, Gujarat, Haryana, Karnataka and Andhra Pradesh were affected by desertification. Dr. Swaminathan defined the desertification as the diminution or destruction of the biological potential of land, which can lead ultimately to desert-like conditions. It would include conditions like salinity and alkalinity and soil erosion arising from indiscriminate felling of trees.

Dr. Swaminathan said that Union Government was also keen on taking up the project to arrest the desertification as the country had the facility and technical knowhow to tackle the problem. He pointed out that in the world countries like the United States, USSR, Israel and China had successfully tackled this problem. The Jordan Valley in Israel and the Imperial Valley in California were developed tremendously in the recent years after being affected by the desertification. He said that on the world, one-third of the total land had been affected by the desertification. Dr. Swaminathan said that the UN Conference on Desertification held at Nairobi recently has finalised the action plan designed to assist in arresting the march of desertification. The action plan was formulated by a committee of the conference for which Dr. Swaminathan was the chairman. He said that the Indian desert was the most densely populated in the world with 61 persons per sq km as against three persons per sq km in most other desert areas. The Government has accorded the highest priority to agriculture and rural development. For achieving the goal, speedy reclamation of areas affected by different processes of desertification was exceedingly important.

College in Sikkim opened

The first degree college with courses in humanities, commerce and sciences was inaugurated at Gangtok by Mr B.B. Lal, Governor of Sikkim. Mr. Lal expressed the hope that students of Sikkim would take full advantage of the facilities provided by the college. The college would soon have the building of its own. The government has already sanctioned a sum of Rs 16 lakhs for this purpose. Dr. A.K. Sinha, Principal of the college felt that a modest beginning had been made with thirtyfour students, but he hoped that the college would serve as a nucleus for the future university of Sikkim.

Nehru science centre

The Council of Scientific and Industrial Research is setting up a science centre in Bombay named after Jawaharlal Nehru. The Council has also taken over the Bio-Chemicals Unit from the Patel Chest Unit of Delhi University. This unit will henceforth function as CSIR centre for Bio-Chemicals.

The Nehru Science Centre will consist of a science exposition unit for children, a museum of science and history, a hall of industry, a science unit for non-formal education and a science information unit for the general public.

The Centre will also establish a unit design for developing new types of exhibits, a production centre, and a research centre for the study of history of science and technology.

Financing of Higher Education in India :

J.L. Azad Sterling, 1976, pp. xii 236, Rs. 40.00.

Higher education is facing a serious crisis in all the countries, according to the observers of the educational scene. Pressure of large and growing numbers of students, student unrest, declining standards, inadequacy of finances, imbalances in the supply of and demand for the output of higher educational institutions, etc are the various

dimensions of this crisis. Any objective analysis of each of these dimensions is likely to be of great help in suggesting measures for avoiding the further deepening of such a crisis. It is from this point of view that Azad's study of Financing of Higher Education in India is to be welcomed.

Divided into nine chapters the study examines the expenditures and sources of finance for higher education for India, where enrolment in higher education is more than half of the entire population of all the Union Territories in the country. The study gives evidence of painstaking scrutiny of voluminous data about higher educational finances collected from the U.G.C., Central and State Governments, institutions of higher education and from the *ad hoc* sample survey of the viewpoints of vice-chancellors, academicians, and administrators. There is also a brief discussion of procedural and administrative aspects of educational finances.

Examining the financial statistics from 1950 to 1973 (by and large the period chosen for detailed analysis in the study is 1947-48 to 1966-67) the author states that the institutional pattern or, more realistically the 'non pattern' that has emerged in the post-Independence period, is heterogenous and diffused in complexion, size and quality. Similar 'non-pattern' is evident in case of higher educational finances also. Universities receiving relatively rising share in resources than colleges even though the latter cater to increasing number of students, central universities getting larger share in U.G.C. funds than others, central government's share in higher educational finances increasing faster than state sector's share, complexity in implementation of grants in aid policy for higher educational institutions, lopsided development of general and professional education due to grants in aid policy, etc. are some of the aspects of this labyrinth of higher educational finances which have received the attention of the author. The author has brought

into focus the complexity of the state and U.G.C. grant-in-aid system, the lack of coordination between the various grant making bodies and their implications for the institution.

However, the suggestion for opening of the state level U.G.C.s one is afraid, may increase the complexity and add to the already existing proliferation of the bureaucratic institutions for disbursement of higher educational finances. About fees, the author is of the opinion that the potentialities of this source have not been fully exploited. He suggests, however, a measure of differential fees, differentiation being based upon the intellectual capacities of students. While the differential fee policy based upon incomes, citizenship, etc. has an operationally meaningful basis, differentiation according to intellectual capacity as suggested by the author, might pose several questions of practical significance. Excepting some of these, other suggestions of the author regarding rationalization and widening of the financial base for higher education seem to be feasible.

The book at times gives an impression of being sketchy and incomplete in its coverage. Discussion of the problems of varying elasticity of different items of funds with reference to their sources should have found its place in this study of educational finances. Thus, a question why are endowments declining in importance, may be answered in a better way by a study of the association between endowments and income or other motivating factors. Similarly, others untouched problems are the relationship between tax and non-tax revenues of the government and expenditure on the higher education, the degree of regressivity of the fee rate structure, etc. These aspects have obviously significant implications for policy making in higher educational finances. A useful volume!

Reviewers: P.R. Panthamukhi & G.D. Sharma are on the staff of the University of Bombay. They have specialised in the area of economics of education. (Courtesy: Indian Book Chronicle)

**Monograph on Internal
Assessment for
Universities (AIU), 1977,
Pages: 191, Price: Rs. 6.00**

It is a systematic, comprehensive, lucid, illustrative, convincing and interesting account of the concept and implementation of continuous internal assessment, a component of examination reforms much talked about but still vaguely understood.

The need for continuous internal assessment is emphasized in order to assess any aspect of a student's performance with reference to the 'total behaviour pattern', i.e. 'the whole person'. It is the teacher alone who is capable of viewing the student as a whole person as well as helping with the assessment of his progress analytically.

It is in the context of 'Objectives' and 'Learning outcomes' that a student's personal characteristics and qualities are to be assessed. The point is elaborated by listing possible outcomes of learning and breaking them down into precise behavioural terms. This is followed by listing the tools of evaluation for measuring these outcomes.

The main purpose of internal assessment is said to be the integration of teaching and evaluation and testing those skills and abilities which cannot be tested through a written examination at the end of a course. These points figure elsewhere also in the literature on internal assessment but the monograph lends precision and practical meaningfulness by proposing how best to go about designing such a scheme.

The crucial factor is the need for securing the involvement of the teachers in the planning and designing of a model of internal assessment for their universities and colleges. A comprehensive analytical questionnaire to solicit the views of the teachers with a view to evolving a model of internal assessment in their disciplines has been included in the monograph. It has been tried at a number of universities and the results have been consolidated and presented in the monograph also. It has been very pertinently point-

ed out that teachers will take the design created by them out of their own experience more seriously than a design imposed on them.

Moreover, the technique has the potential of doing away with ad hoc decisions on the design. This kind of design is marked by 'both rigidity and flexibility—rigidity is to be understood in terms of the six major components as common for all subjects, flexibility is there in that different groups of different subject teachers will come with different weightages for these components, thus truly reflecting the nature, character and objectives of their subjects in the process of teaching/learning'. (p 71). It has also been suggested that this kind of exercise should be undertaken every year to generate better and improved results.

However, with all the academic interest that the "illuminative" character of the approach generates, the idea of every teacher being competent to make a meaningful response to some of the significant questions raised seems to be of dubious validity. A certain technique to select 'a reasonable number of teachers, having sufficient teaching experience' (p 82) and fully equipped to fill in the questionnaire may have to be evolved. Teachers imbued with a sense of indifference to matters academic (their number is not small) or incapable of coming to grips with academics (no reflection this! but they do exist), some of them occupying positions of authority, are a potential ancillary variable. It is no use pretending that major reforms, national and scientific, can be ushered in despite their presence on campuses. 'The success of a system of internal assessment will largely depend on the teachers; their understanding, training, potential, honesty, unbiased attitude and above all the "Professionalism" they bring to their work of teaching-learning testing' (p 140). It is true and therein lies the snag.

The monograph rightly points out that 'if internal assessment is done sincerely and honestly by every teacher in the way demonstrated, there will not be any necessity to have an end university examination' (p 109). However,

since the present position accepts the coexistence of internal assessment and external examinations, the monograph presents certain scientific techniques of apportioning weightages. Pointing out the inadequacy of treating internal assessment as a form of mini examinations, conducted periodically, it emphasizes the need for testing certain other important abilities. In such a situation the internal and external assessment marks are not to be combined 'for the simple reason that they are assessing different kinds of abilities and skills' (p. 114). Suggesting the ratio of 50:50 for external marking and internal assessment, the monograph presents the techniques of 'relative ranking', proposed by Amrik Singh, Edwin Harper Jr. and Natarajan elsewhere as well. Whether the method proposed can 'be handled by clerks (with a minimum of training and supervision and without any machines at all) (p. 125), is an open question. In the case of a large number of examinees 'scaling based on mean and standard deviation can be adopted' (p. 128). The monograph recommends that even here 'after scaling the marks may be indicated separately'.

A good case, however, has been made out for adopting 'direct grading' in place of awarding marks to meet some of the crucial problems.

The monograph also considers some general problems, in internal assessment (p. 122), particularly in the context of affiliating universities and makes certain suggestions towards solution. In the case of an intentional distortion on the part of a teacher, no fear of 'the principal' or 'the entire academic community' (p. 125) is likely to yield useful results.

In any case, those who are generally interested in the problems of examinations and education and ushering in reforms will find the monograph a very interesting study. It carries a comprehensive bibliography and useful information in the Appendix on 'Internal Assessment in Indian Universities'.

Satya Pal Julka
Zakir Husain College,
Delhi.

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Agrawal, Sita Ram Devi Narain. On the convergence and summability of fourier bessell series. M.S. University of Baroda.
2. Kalele, Arvind Chintaman. A study in convergence and summability of ultraspherical and Jacobi series. Vikram University.
3. Nagamuni Reddy, L. Studies in some plane geometric configurations and their equivalent algebraic structures. Sri Venkateswara University.
4. Nagarajan, Kasturi. Multipliers on segal algebras. University of Madras.
5. Shrivastava, Namita. Absolute norlund summability of fourier series. University of Jabalpur.
6. Viswanathan, K. Some contributions to numerical solution of boundary value and initial value problems. University of Madras.

Physics

1. Rajan, S.S. Studies in structural crystallography. University of Madras.
2. Satyan, V. Measures for Hartree Fock states and hamiltonian operators and a new variational method in the study of nuclei. Gujarat University.
3. Sen, Suchitra. Studies on vacuum evaporated thin films by X-ray diffraction. University of Calcutta.
4. Sharma, Prabhakar K. Investigations on the equatorial ionospheric phenomena. Gujarat University.
5. Srivastava, Bipin Kumar. Study of external and internal modes of water in hydrates. Kanpur University.

Chemistry

1. Balasubrahmanyam, R. Studies in the chemistry of homocyclic compounds. University of Madras.
2. Bandyopadhyay, Gautam. Some studies on spalling of magnesite refraction. University of Calcutta.
3. Bohate, Abilish Kumar. Kinetic study of hydrolysis of compounds containing carbon, nitrogen and phosphorus (C-N-P) linkages. Jiwaji University.
4. Damle, Madhav Hari. Organic chemistry of nitrogen and sulphur: Synthesis of certain γ -rayl trithioaliophanic acids and their derivatives. Nagpur University.
5. Debnath, Narayan Bikas. Studies on some medicinal plants of India. University of Burdwan.
6. D'Souza, T.J. Physiochemical and physiological studies on gamma emitting fission product radionuclides and neutron activated nuclides in typical Indian soils and soil plant system. Gujarat University.
7. Gaekwad, Yeshwant Ganpatrao. Studies in xanthenes. M.S. University of Baroda.
8. Gain, Niranchandra. Studies in the coordination complexes of substituted pyrazoles. University of Calcutta.
9. Ghoshal, Prabirkumar. Synthetic studies related to diterpenoids and related products. University of Calcutta.
10. Gopalakrishnan, Ganesa. Kinetic studies in oxidation reactions. University of Madras.
11. Gupta, Raghunath Prasad. Studies in kinetics and mechanism of oxidation of aliphatic carboxylic acids—such as iso and normal, butyric and valeric acids by potassium permanganate. Vikram University.

12. Jain, Anil Kumar. Chemical investigation of amino acids and proteins of some Indian seeds. Vikram University.

13. Kayal, Pankajbhushan. Reaction of alkali metal nitrates ($Rb NO_3$) with silica and aluminosilicates. University of Calcutta.

14. Kostova, Ivanka Nicholova. Studies in the chemistry of some Indian plants and studies in the reactivity of B-naphthol. University of Delhi.

15. Mittal, J.P. Industrial utilisation of pith from some agricultural residues. Kanpur University.

16. Mohanty, Nirod Kumar. Reactions of coordinated ligands. Utkal University.

17. Parmar, Virinder Singh. New polyphenolics from some Himalayan plants and their synthesis. University of Delhi.

18. Pratihari, Hemanta Kumar. Kinetics of metal ion oxidation of organic compounds in solution. Utkal University.

19. Rajeswari, S. Inorganic polymer. University of Madras.

20. Sen, Parimalchandra. Studies on fish lipids. University of Calcutta.

21. Sridharan, R. Transesterification studies. University of Madras.

22. Ved Parkash. Synthetic studies in oxygen heterocycles (isocoumarins) and studies in thermal behaviour of poly (Schiff Bases). Sardar Patel University.

23. Venkatachalam, T.K. Effect of addition agents in electro deposition. University of Madras.

Earth Sciences

1. Gopikishan. Petrology and geochemistry of the granites of Moula Ali Bolarum and Yousufguda areas, Hyderabad, Distt. A.P., Osmania University.
2. Mukhopadhyay, Mrinalkanti. Structural characteristics of rocks around Kalimpong, West Bengal. University of Calcutta.
3. Nijagunappa, R. The study of the ultrabasic rocks of Nuggihalli Schist Belt, Hassan District and the area around Kadakola, Mysore District with special reference to ore mineralisation associated with them. Bangalore University.

Engineering & Technology

1. Aravindan, P. Investigation into the improvement of cutting ability of spur gear generating shaper cutters. University of Madras.
2. Biswas, Sanat Kumar. Optimization of steam cycles for gas coiled nuclear power plant. University of Calcutta.
3. Kane, A.S. Study on mechanical engineering problems involved in reverse osmosis desalination technique. Saurashtra University.
4. Srivatsavan, R. A new hypothesis on fatigue damage in multilevel stressing. University of Madras.

BIOLOGICAL SCIENCES

Biochemistry

1. Ray, Pranab. Studies on Eukaryotic R.N.A. synthesis in relation to plant hormone receptor proteins. University of Calcutta.
2. Tamam, Abdulrahim. Studies on algal-bacterial symbiosis in high rate oxidation ponds using *Scenedesmus obliquus*. M.S. University of Baroda.

Botany

1. Alexander, K.C. Limnological studies on upper and lower lakes of Bhopal. Vikram University.
2. Arora, Asha. Studies on the role of copper in growth and development of fresh water algae. Kanpur University.
3. Buch, B.H. Study of plant chemistry and its medicinal applications. Saurashtra University.
4. Chowdhry, Prakash Narain. Studies on some aquatic fungi with reference to ecology and taxonomy. University of Jabalpur.
5. Hakim, K.L. Genome differentiation in genus *oryza*. Utkal University.
6. Jani, D.J. Effect of pre-treatment of seed with growth regulators on growth, development, metabolism and yield of some crop plants. Gujarat University.
7. Krishnamurthi, M.S. Physiology of host parasite relationship with reference to respiratory changes in bacterial blight of cotton. Madurai University.
8. Malathi, V.G. Studies on fusarium wilt of cotton. University of Madras.
9. Misra, Aruna Kumari. The effect of obligate parasites on host physiology. Utkal University.
10. Pai, K.U. Effect of hearty water (D_2O) on physiological processes in higher plants. Gujarat University.
11. Pandey, Har Narayan. Taxonomical morphological and ecological studies on some grasses. University of Saugar.
12. Ray, Sumit Kumar. Bacteriological and immunological studies on choleraemic vibrios. University of Calcutta.
13. Saxena, Rajendra Kumar. Studies on the control of reproductive differentiation in *aspergillus nidulans* under submerged conditions. University of Delhi.

Zoology

1. Ambikamma, B. Studies on the spermatogenesis in *dysdercus cingulatus* fabr (Insecta: Heteroptera: Pyrrhocoridae) University of Kerala.
2. Annamalai, P.M. Studies in reptilian endocrinology. University of Madras.
3. Aruldas, Hannah. Studies on jumping spiders, Salticidae: Araneida. University of Madras.
4. Cherian, C.J. Studies on some boring and fouling crustaceans. University of Cochin.
5. Divakaran, O. Studies on the biology of *parhyale hawaiiensis* dana. University of Kerala.
6. Khot, ajini Prabhakarro. Studies on some physiological aspects and control of the snail, *melanoides tuberculatus*. Marathwada University.
7. Misra, Bivekananda. Studies on the skin of the garden lizard, *calotes versicolor*. Berhampur University.
8. Padmini, K. Soil and water pollution by tannery effluents: A microbiological study. University of Madras.
9. Salih, M. Studies on the clam, *meritrix casta* (Chemitz) off Cochin Barmouth. University of Cochin.
10. Seethalakshmi, L. Reproductive physiology of some rodents and invertebrates. Gujarat University.
11. Sheth, K.M. Studies on the mammalian reproductive tract with special reference to accessory glands under normal and altered physiological conditions. Gujarat University.

Medical Sciences

1. Basu, Chhaya. Studies on certain aspects of uterine function. University of Calcutta.
2. Ghoshal, Ranjitkumar. Comparative haematological studies of enzymes. University of Calcutta.
3. Kamalam, A. A study of mycoses in a tropical skin clinic with special observations on *Tinea capitis*. University of Madras.
4. Menon, Venugopal Padmanabhan. Effect of proteins

and carbohydrates on the metabolism of glycosamino-glycans in relation to atherosclerosis. University of Kerala.

5. Mukhopadhyay, Saroj Kumar. Some of the metabolic circulatory changes in the hearts of rats exposed to high environmental temperature. University of Calcutta.
6. Najma Begum. Studies on the changes in tissue composition in diabetes mellitus. University of Madras.
7. Nambisan, Bala. Role of ascorbic acid in the metabolism of glycosaminoglycans in relation to atherosclerosis. University of Kerala.
8. Sasi, P.K. Biochemical investigations on human *ascaris lumbricoides*. University of Kerala.
9. Sudhakaran, P.R. Role of vitamin A in the metabolism of glycosaminoglycans in relation to atherosclerosis. University of Kerala.

Agriculture

1. Arumugam, R. Studies on resistance to yellow vein mosaic disease of bhendi, *abelmoschus esculentus* (L) moench. Tamil Nadu Agricultural University.
2. Bansal, Rameshwar Dass. Studies on the interaction between tobacco mosaic virus and *colletotrichum capsici* (Syd.) butter and bisby in chilli. Punjab Agricultural University.
3. Bishnoi, Krishan Chandra. Growth, yield and quality parameters of three raya (*bassica juncea* (L) czern and coss) varieties and their moisture and nutrient use pattern in relation to sowing time and nitrogen levels. Haryana Agricultural University.
4. Chattopadhyay, Biplab Kumar. Studies on propagation of jackfruit. University of Calcutta.
5. Dwivedi, Ram Saran. Metabolic studies on buffalo bull semen. Kanpur University.
6. Jha, Bhairab Kant. Studies on better utilisation on non-edible oilseed cakes. Bihar University.
7. Khan, Mohammad Ishtiaque. Effect of simulated drought on physiology and metabolism of maize, *zea mays* L and sunflower, *helianthus annuus* L crops. Haryana Agricultural University.
8. Krishnaswami, S. Studies on induced mutations in green gram, *vigna radiata* (L) wilczek. Tamil Nadu Agricultural University.
9. Marappan, P.V. Studies in interspecific hybridisation and experimental introgression within cultivated tetraploid species of *gossypium* Linn. Tamil Nadu Agricultural University.
10. Milakh Raj. Salt distribution and water transmission characteristics of soils as influenced by composition and concentration of electrolytes. Haryana Agricultural University.
11. Ramaswamy, V. Nutritional requirements of active lactic starter cultures. Tamil Nadu Agricultural University.
12. Vas Dev. Nutro-physiological studies in triticale crop. Kanpur University.

Veterinary Science

1. Dixit, Nandan Lal. Pathology of pneumonia in sheep and goats caused by chlamydia and mycoplasma organisms. Haryana Agricultural University.
2. Jagjit Singh. Experimental studies on pathology and pathogenesis of marek's disease in chicks. Haryana Agricultural University.
3. Paikane, Dattatrya Laxmanrao. Studies on the pathology and pathogenesis of ovine brucellosis. Haryana Agricultural University.
4. Pandurang, Deshmukh Appasaheb. Effect of feeding different calf starters on the growth of buffalo calves.
5. Trivikrama Rao. Pathology of experimental marek's disease with particular reference to immunotherapy and immunoglobulin studies. Haryana Agricultural University.

CLASSIFIED ADVERTISEMENTS

UNIVERSITY OF DELHI

Advt. No. Estab. IV/45/77

Applications on the prescribed form are invited for the following posts:

the subject concerned with a Doctor's Degree or equivalent published work.

Independent published work (in addition to the published work mentioned above) with atleast 5 years'

five years till such time he/she fulfils the above mentioned requirements.

Essential Qualifications for:

4. Lectureship in Law

Consistently good academic record with a first or high second class (B+) Master's degree in the Law OR an equivalent Degree of a foreign University in the subject concerned.

Explanation

Consistently good academic record would mean overall record of all assessments throughout the academic career leading to the Master's Degree, which should be at least be B+ or high second class.

5. Research Associateships

Good academic record with first or high second class (B+) Master's Degree or an equivalent degree of a foreign University in the subject concerned.

Note: Initial appointment will be for a tenure period of three years extendable by another two years only. In no case the tenure will extend beyond 5 years in all.

6. Junior Programmer

(a) Atleast a Second Class (Not less than 50% marks in the aggregate) Master's Degree in Mathematics, Statistics, Econometrics, Operations Research or Physics;

OR

At least a Second Class (Not less than 50% marks in the aggregate) Bachelor's Degree in Engineering from a recognised institution; and

(b) (i) At least two years' experience in Computer Programming at a recognised institution;

(ii) Knowledge of one of the high level languages like Fortran, Cobol, Algol, PL/I.

7. Console Operator

(a) Atleast a Second Class (Not less than 50% marks in the aggregate) Master's Degree in Mathematics, Statistics, Econometrics, Operations Research or Physics;

OR

Atleast a Second Class (not less than 50% marks in the aggregate) Bachelor's Degree in Engineering from a recognised Institution; and

(b) Familiarity with Console Operation.

8. Garden Overseer

B. Sc. Agriculture/Horticulture.

9. Stenographer (Hindi)

Atleast Matriculation but Graduates with previous experience of drafting and noting will be preferred. Minimum speed 100 W.P.M. in Shorthand and 30 W.P.M. in Hindi typewriting.

Note: Candidates will be required to appear and qualify in the tests in General Hindi, Shorthand and Typewriting, to be held by the University.

S. No.	Department	Designation
1.	Chemistry	Three Professors
2.	Psychology	One Professor
3.	English	One Professor
4.	Economics	(i) One Professor (ii) Two Readers (One temp. upto 25.7.1978) (iii) Research Associate (CAS)
5.	Chinese & Japanese Studies	(i) One Professor of Chinese Language and Literature (ii) Two Readers (One in Sino-Korean Studies and other in Chinese Studies) (iii) Research Associates in Chinese Studies
6.	History	(i) Two Professors (ii) Two Readers
7.	Philosophy	One Reader with specialization in Philosophy of Science, Philosophical Methodology & Techniques.
8.	Physics & Astrophysics	One Reader
9.	Faculty of Management Studies	Eight Readers (One temp. but likely to continue)
10.	Commerce	One Lecturer (Temp. upto 31.7.1978)
11.	Anthropology	Two Lecturers
12.	Faculty of Law: Evening Law Centre I	One Lecturer (Temp. upto 14.10.1979)
13.	Modern Indian Languages	One Lecturer in Punjabi (Temp. for one year)
14.	Sanskrit	One Lecturer (Temp. upto 5.10.1979)
15.	University Garden	One Garden Overseer
16.	Computer Centre	(i) One Junior Programmer (ii) One Console Operator
17.	Central Office	One Stenographer (Hindi)

The Scales of Pay of the posts are:

1. Professor : Rs. 1500-60-1800-100-2000-125/2-2500.
2. Reader : Rs. 1200-50-1300-60-1900.
3. Lecturer:Rs. 700-40-1100 50-1600.
4. Research Associate/Junior Programmer : Rs. 700-40-900-EB-40-1100-50-1300.
5. Console Operator: Rs. 550-25-750-EB-30-900.
6. Garden Overseer / Stenographer (Hindi) : Rs 425-15-500-EB-15-560-20-700.

All posts carry D.A., C.C.A. and H.R.A. as admissible under the rules in force in the University from time to time.

I. Essential Qualifications for:

1. Professorships

A Scholar of eminence.

Independent published work of high standard and experience of teaching Post-graduate classes and guiding research for a considerable period desirable.

2. Readerships

Good academic record with first or high second class Master's Degree in

teaching experience in Honours/Post-graduate classes essential.

3. Lectureships: (other than Law)

Good academic record with a first or high second class Master's Degree or an equivalent degree of a foreign University in the subject concerned. (Note: Second class would mean at least 50% marks in the subject or equivalent grade).

Desirable

(i) A Doctor's Degree or Evidence of Research work of equivalent standard in the subject concerned. (ii) Teaching experience of Degree/Post-graduate classes.

Provided if a teacher is not a Ph.D./M.Phil./M. Litt. at the time of his/her appointment and does not qualify himself/herself for the award of Ph D./M.Phil./M.Litt. Degree from a recognised University in a subject which is being taught by him/her within a period of five years from the date of his/her appointment or does not give evidence of research work within that period in the subject concerned, he/she shall not be entitled to any future increments after the expiry of he said period of

II. Special/Desirable Qualifications for:

1. Professorship in Economics

Preference will be given to a scholar who has specialisation in Economic Theory, International Economics or Monetary Economics.

2. Professorship in Chinese Language & Literature

High proficiency in reading modern and classical Chinese. Published work in Chinese.

3. Readership in Sino-Korean Studies

Proficiency in both Chinese and Korean Languages.

4. Readership in Chinese Studies

Proficiency in Chinese language. Specialization in Comparative studies of India and China. Research papers on Chinese society based on primary source materials.

5. Research Associateships in Chinese Studies

Proficiency in Chinese language, Experience in research.

6. Professorships in History

(i) Specialization in medieval Indian History.

(ii) Specialization in historiography/ancient India.

7. Readerships in History

(i) Specialisation in British/European History. The candidate should produce evidence of research in any field of British/European History and should possess proficiency in an European language other than English.

(ii) South Indian History and Culture. The candidate should have knowledge of early history of Peninsular India and should possess proficiency in one of the South Indian languages.

8. Readership in Physics & Astrophysics

Specialisation in any branch of Theoretical or Experimental Physics will be preferred.

9. Readerships in the Faculty of Management Studies

Candidates with Master's Degree in Business Management, Engineering, Technology, Mathematics or other field of Social Sciences such as Economics, Commerce, Psychology, Sociology, etc. with specialisation in one or more of the following areas:

Business Policy, Management Concepts, Management Information System, Materials Management, Marketing Management/Financial Management/Management Accounting, Economic environment of Business, Personnel Management and organisational Behaviour,

and with consultancy/practical executive experience in a business or an industrial organisation will be given preference. Familiarity with case methods of instruction, advanced training in modern methods of teaching in management are desirable.

Following are the specific requirements for the posts of Readers in the various subject areas:

(a) Business Policy/Management Concepts:

Experience of teaching Business Policy Course through case methods and/or practical experience in the area of corporate planning.

(b) Management Information System: Teaching experience in the subject area in addition to practical/consulting experience in the application of MIS in different functional areas of Management.

(c) Materials Management: Specialisation in the subject area and/or consulting experience in the application of quantitative materials management.

(d) Marketing Management: Research and/or practical experience in Marketing Research/Advertising Management/Application of Quantitative Methods in Marketing Management.

(e) Financial Management/Management Accounting:

Teaching Experience in the subject area and advanced research in Public Utility/Hospital Accounting will be preferred. Candidates with Chartered Accountancy/Cost Accountancy qualifications may also apply.

(f) Economic Environment of Business:

Teaching experience at the Post-graduate level in the subject area and advanced research in Applied Macro-Economics. Knowledge of Econometrics and Public Enterprises Management will be additional qualifications.

(g) Personnel Management/Organisational Behaviour:

Experience of conducting executive development programmes, practical/consulting experience in selection techniques and manpower planning and/or advanced research and training in Applied Behavioural Science.

10. Lectureship (Temp.) in Commerce

Postgraduate teaching experience of Management Accounting or Marketing or Business Statistics for 3 to 4 years.

11. Lectureships in Anthropology

For First Post: Specialization in any of the following: (i) Human Genetics, (ii) Human Cytogenetics, (iii) Physiological Anthropology. Field work and Research experience in allied fields.

For Lectureship in Forensic Science

(i) Specialization in Physical Anthropology, (ii) Knowledge of different fields of Forensic Science including finger prints, Serology, Anthropometry, etc. (iii) Two years teaching or research experience, (iv) Doctor's Degree in Physical Anthropology/Forensic Science or evidence of research work of equivalent standard.

12. Lectureship in Punjabi (Temp.)

A sound knowledge of Western theories of Literature.

13. Lectureship in Sanskrit (Temp.)

Specialization in Vyakarana/Sahitaya/Darsana and Epigraphy.

14. Junior Programmer

(a) Experience of participation in training programmes in Computer-related disciplines, and (b) Knowledge of an assembly language.

15. Console Operator

Knowledge of the elements of Computer Programming.

16. Garden Overseer

Experience of supervisory work in an organised garden.

The prescribed application form can be had from the Information Office of the University either personally or by sending a self-addressed envelope (size 5" x 11") with postage stamps worth Rs. 2.55.

Selected candidates will have to produce the original documents relating to their age, qualifications, experience, etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of Degrees, other certificates, mark-sheets, published research articles, etc. should reach the undersigned not later than 12th November, 1977.

Note

1. It will be open to the University to consider the names of suitable candidates who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, in respect of all teaching posts on the recommendations of the Selection Committee.
2. Canvassing in any form by or on behalf of the candidates will disqualify.
3. Candidates from outside Delhi for teaching posts, called for interview will be paid contribution towards travel expenses equivalent to 1½ single Second Class Rail fare.
4. Those who had applied in response to the earlier advertisement for Professorships of English, Chemistry, Chinese Language and Literature; Readerships in Economics (Temp.), Sino-Korean Studies, Chinese Studies, Management Studies and Research Associateships in Chinese Studies, need not apply again but in case they have any additional information to supply, they may do so.

11th October, 1977.

REGISTRAR

UNIVERSITY OF SAUGAR

Advertisement No. R. 2/77

Applications on a prescribed form obtainable from the office of the Registrar on requisition accompanied by a self-addressed stamped envelope and a Postal Order of Rs 5/- as application fee, are invited for the following permanent (except where specified otherwise) teaching posts so as to reach the Registrar, University of Saugar on or before 14 November, 1977.

2. Candidates already in service should send their applications through

the proper channel. An advanced copy, however, may be sent direct.

3. Candidates selected for an interview will have to come to Saugar at their own expense and bring with them their original research papers, degrees and certificates etc.

4. The period of probation shall be two years from the date of appointment. This period of probation may, however, be extended by such further period as the Executive Council may deem fit, but the total period of probation shall in no case exceed three years. Service during the temporary appointment, including the probationary period, may be terminated as per University rules.

5. The age of retirement is sixty years.

6. The University reserves the right to negotiate with suitable person or persons, if necessary, who may not have applied.

7. Preference will be given to Scheduled caste and Scheduled tribe candidates if found suitable.

8. The University reserves the right to fill up or not to fill up the posts and/or to call only selected candidates for interview. The number of posts likely to be filled may vary.

9. The candidates must mention in each case the branch of their specialisation and must show their qualifications from matriculation upwards indicating in each case the marks/percentage of marks/division/grade and the subjects taken.

10. Scales of Pay

Professors: Rs. 1100-50-1300-60-1600

Reader : Rs. 700-50-1250

Assistant: Rs. 400-40-800-50-950

Professors

With D.A. & P.F. benefits according to University rules.

These scales of pay are likely to be revised, in which case the qualifications and conditions as prescribed for revised scales will be applicable.

11. Qualifications

I. Professor: (a) A first or second class Master's degree of an Indian University or an equivalent qualification of a foreign University in the subject concerned.

(b) Either a degree of the Doctorate standard or published work of high standard.

(c) Specialisation in the relevant branch of the subject concerned, where specialisation is necessary.

(d) Not less than 10 years experience of post-graduate teaching, and

(i) Experience of successfully guiding research.

(ii) In case of Pharmaceutical Science and Applied Geology, experience of successfully guiding research or industrial or field experience.

Provided that in the case of a candidate of exceptional merit the Executive Council may, on the recommendation of the Selection Committee and with the prior approval of the Kuladhipati relax any of the qualifications mentioned in (a) to (d) above.

II. Reader: (a), (b) and (c) Same as for Professor with post-graduate teaching experience of five years and three years experience of guiding research. Working knowledge of Hindi shall be a desirable qualification

III. Assistant Professor: (a) First or second class Master's degree of an Indian University or equivalent qualification of a foreign University in the subject concerned.

(b) A research degree in the subject or experience of teaching degree and/or postgraduate classes will be a desirable qualification.

(c) Knowledge of Hindi will be desirable.

University College of Education

1. One post of College Professor (permanent).

Scale of pay: Rs. 680-40-800-50-1000-EB-50-1150 (P.S.) with D.A. & P.F. according to University rules.

Qualifications: At least a Second Class Master's Degree in Education with at least six years experience of teaching M.Ed. classes or ten years experience of teaching B.Ed. classes.

Desirable: Knowledge of Hindi.

2. Four posts of Lecturers (permanent).

Scale of pay: Rs. 400-25-500-30-680-EB-40-800 (PS) with D.A. & P.F. according to University rules.

Number of Posts in each subject

Subject	Professors	Readers	Asstt. Profs.	Specialisation
1. Physics	1	—	—	—
2. Chemistry	—	1+1	4+1	One permanent Reader in Organic Chemistry. The other post of Reader and one Asstt. Prof. are temporary under U.L.P. Programme.
3. Botany	1	1+1*	1	One Reader in Cytogenetics/Organism Physiology/Cell Molecular Biology.
4. Zoology	—	1*	—	—
5. Mathematics	1*	—	—	—
6. Criminology & Forensic Sc.	—	1	—	—
7. Geography	—	1*	—	—
8. App. Geology	1*	—	—	—
9. Pharmacy	—	3+1*	1*	Readers: Pharmaceutics/Pharmacology/Pharmacognosy/Pharmaceutical Chemistry. Asstt. Prof.: Pharmacology/Pharmaceutical Chemistry
10. History	1	1	—	—
11. Political Sc.	1	—	—	—
12. Philosophy	1	1	1	Professor: Indian Philosophy. Reader: (post temporary for five years in the first instance)—Buddhist Studies.
13. Hindi	2	1*	—	—
14. Ancient Indian History Culture & Archaeology	1	—	—	—
15. Economics	—	1	2	—
16. Psychology	—	—	2	—
17. Sanskrit	—	1	1	—
18. English	—	—	2	—
19. Linguistics	1	1	—	—
20. Urdu/Persian	—	1	—	Ability to translate manuscripts from Persian to Hindi/English.
21. Marathi	—	—	1	—
22. Music	—	—	1	—
23. Law	—	—	1	—

* Appointments temporary against lien/leave vacancies only. On termination of the lien the appointees will be entitled for permanent appointment according to rules.

Note: (i) Out of the two posts of Professors in Hindi one is named as 'Makhan Lal Chaturvedi Chair',
(ii) The Professorship in Ancient Indian History, Culture & Archaeology is named as 'Tagore Chair'.

Qualifications: At least second class Master's degree in Education,

Desirable: Knowledge of Hindi.
Central Instrumentation Lab. & Workshop

1. Engineer

Scale of Pay: Rs. 1100-50-1600 with the usual benefits of D.A. & P.F. etc. as applicable to the posts and scales of pay came into existence after 4.5.74.

2. Technicians (T'C)

Scale of pay: Rs. 380-12-500-EB-15-560 with usual benefits of D.A. etc. as in the case of Engineer.

Qualifications

Engineer: Essential:

At least second class post-graduate degree in Engineering or Science with five years experience in R & D of instruments or in operation, repair & maintenance of modern instruments.

Technician: Mechanical Workshop Essential:

Certificate course from I.T.I. with seven years experience.

Technician: (Electronics)

Certificate course from I.T.I. in Electronics/Electrical Engineering with five years experience.

Note: All the candidates who have applied in response to Advertisements No. R.1/76 dated 20.2.1976, No. R. 2/76 dated 12.7.1976 and No. R.3/76 dated 9.12.76 need not apply again.

**B.B. Khare
REGISTRAR**

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is 11th November, 1977. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single Second Class railway fare only.

**Jamalur Rahman
REGISTRAR**

Teaching of Field Crop Agronomy

UNESCO in association with Tamil Nadu Agricultural University and the Indian Council of Agricultural Research will hold a Postgraduate course for University Lecturer and postgraduate students intending to pursue an academic career on "The Teaching of Field Crop Agronomy" at the Tamil Nadu Agricultural University, Coimbatore from January 10-28, 1978. This postgraduate course is one of the series of international courses for academic staff and postgraduate students which UNESCO is organising in accordance with the recommendations of the World Conference on Agricultural Education and Training held in Copenhagen in 1970. Its objectives are:

- (a) to discuss recent advances and research findings in Field Crop Agronomy;
- (b) to discuss the place of Field Crop Agronomy within the undergraduate curriculum in agriculture and its relation to other subjects such as the applied science, animal production, economics and management;
- (c) to discuss the Field Crop Agronomy curriculum for undergraduate training and the relative weightage of professional courses, engineering science, biological courses, physical sciences, humanities, etc.
- (d) to discuss methods for improving the quality of teaching of Field Crop Agronomy subjects at various levels under different programmes;
- (e) to discuss postgraduate training and research programmes in Field Crop Agronomy.

PERSONAL

1. Dr. P.S. Lamba has taken over as Vice-Chancellor, of Haryana Agricultural University, Hissar with effect from October 1, 1977.
2. Dr. Lakshman Jha has taken over as Vice-Chancellor of Mithila University with effect from October 3, 1977.
3. Dr. L.S. Negi has taken over as Vice-Chancellor of Himachal Pradesh University with effect from October 3, 1977.
4. Dr. Attar Singh Yadav, Head of the Dept. of Chemistry, Magadh University (Bihar) has been appointed Vice-Chancellor of Acharya Narendra Dev Agricultural University, Faizabad.
5. Dr. Dharam Pal Singh, Pro-Vice-Chancellor of Haryana Agricultural University, Hissar has been appointed Vice-Chancellor of G.B. Pant University of Agriculture and Technology, Pantnagar.

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 23/77-78

Applications, on the prescribed form, are invited for the following posts:

Lecturers in Commerce (Six Temporary posts)

Scale of Pay: Rs. 700-40-1100-50-1600 plus allowances.

Qualifications

(a) A Doctor's degree or research work of an equally high standard; and

(b) consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign university.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Desirable

Specialisation in any of the subject.

(i) Accounts.

(ii) Managerial Economics.

(iii) Monetary Theory & Banking

(iv) Cooperation & Industries.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

BANARAS HINDU UNIVERSITY
Advertisement No. 11/1977-78

Applications are invited for the under-mentioned posts. The benefit of Provident Fund/Pension, Dearness Allowance, House Rent Allowance and City Compensatory Allowance are admissible according to University Rules. The retirement age of University employees is 60 years. The appointment will be made on the two years probation on all permanent posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications will be entertained on the prescribed form duly supported with a Bank Draft or Crossed Indian Postal Orders for Rs. 7.50 in favour of the Registrar, Banaras Hindu University towards the application fee. Application forms alongwith the leaflet of information will be supplied free of cost by the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005 on receipt of Re. 0.40 paise stamped self-addressed envelope of 23 cm x 10 cm size. Candidates called for interview for these posts will be paid actual Railway fare by the Second class plus reservation charges for sleeper, if paid, and/or actual Bus fare from the present residence both-ways by the shortest route as per University Rules. No other expenses will be paid.

Applications for each post be sent separately alongwith attested copies of certificates in support of the qualifications and experience mentioned in the application and be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005.

Incomplete application in any respect will not be entertained for consideration.

Those who are in service should apply through proper channel. M.O. or Cheque will not be accepted towards the application fee.

Last date for receipt of application is November 14, 1977.

1. Professor of Surgery: (temporary likely to be made permanent) (one).

Grade: Rs. 1500-60-1800-100-2000-125/2-2500+N.P.A. admissible as per rules.

Qualifications Essential: (1) M.B.B.S. or equivalent qualification recognised by the Medical Council of India. (2) M.S. (Surgery)/ M.S. (General Surgery), F.R.C.S. Speciality Board of Surgery, U.S.A. (3) Teaching experience as Associate Professor/Reader in General Surgery for five years in a Medical College. **Desirable:** (1) Research experience and publications in the field of General Surgery in standard journals.

Note: Those who have already applied in response to Adv. No. 3/76-77 need not apply again.

2. Professor of Biophysics: (One).

Grade: Rs. 1500-60-1800-100-2000-125/2-2500+N.P.A. admissible to Medical Graduates only

Qualifications Essential: (1) M.D. (Biophysics), Ph.D. (Biophysics) M.D. (Physiology) or M.D. (Biochemistry) with one year training in Biophysics. (2) About five years experience of teaching and research in a Medical College or other research Institute in the capacity of a Reader or equivalent post

after requisite Post-Graduate qualification. (3) Experience of guiding research. **Desirable:** (1) Original contribution and research publications in the subject. (2) Membership of Professional Bodies/Learned Societies.

Note: Those who have already applied in response to our earlier Advt. No. 8/1974-75 need not apply again.

3. Reader in Surgery: (Neurosurgery, (One).

Grade: Rs. 1200-50-1300-60-1900+N.P.A. admissible as per rules.

Qualifications Essential: (1) M.B.B.S. or equivalent qualification recognised by the Medical Council of India. (2) M.S./F.R.C.S. in Surgery with two years special training in Neuro-Surgery/ M.Ch. in Neuro-Surgery, Speciality Board of Neurological Surgery, U.S.A. (3) Three years teaching experience as Lecturer or equivalent in Neurosurgery. **Desirable:** (1) Research experience and publication in the subject.

4. Reader in Dravyaguna: (One).

Grade: Rs. 1200-50-1300-60-1900+N.P.A. admissible as per rules.

Qualifications Essential: (1) A.M.S./ A.B.M.S. or equivalent qualification in Indian Medicine recognised by the University. (2) D. Ay. M. or Research Degree of Doctorate standard in Dravyaguna—Rasa Shastra. (3) About five years teaching experience in Indian Medicine in any recognised Institution as a Lecturer or on equivalent post in the subject. **Desirable:** (1) Considerable experience of Pharmaceutical work. (2) Original Research publications in Dravyaguna—Rasa Shastra. (3) Qualification in Modern Pharmaceutical or Medicinal Chemistry.

5. Reader in Medicinal Chemistry: (Pharmacology) (One).

Grade: Rs. 1200-50-1300-60-1900.

Qualifications Essential: (1) Good academic record with first or second class M.Sc./M.V.Sc. Degree in Pharmacology or M. Pharm. Degree with special paper in Pharmacology or equivalent qualification. (2) Either a Doctorate Degree in Pharmacology or published work of a high merit in reputed journals. (3) Five years research and/or teaching experience in Pharmacology Department of any recognised Medical College or Research Institute. **Desirable:** (1) Experience of Biochemical and Chemical Pharmacology work connected with research on Indian Medicine. (2) Research-publications.

Note: Those who have applied in response to our earlier Adv. No. 18/1975-76 need not apply again.

6. Technical Officer for Mass Spectrometer: (One).

Grade: Rs. 700-40-900-EB-40-1100-50-1300.

Qualifications Essential: (1) First or High Second class M.Sc. in Chemistry or Physics, B. Tech. (Chemical or Metallurgy or Electronics) (2) Two years' experience in operation, repair and maintenance of Mass Spectrometer/ Electron Microscope in any University or Industry or Research organisation. **Desirable:** (i) Ph. D. or interest in R & D activity in instrumentation.

* * *

THE UNIVERSITY OF BURDWAN
Advertisement No. 7.

5th October, 1977.

Applications are invited for the post

of Registrar of the University on the scale of pay of Rs. 1500-60-1800-100-2000-125/2-2500 with admissible allowances. The post is permanent. Person appointed will be on probation for one year and may be confirmed thereafter on the basis of approved service.

Qualification and experience required

High academic distinction with consistently good academic career and 10 years' experience in administrative position in academic line, preferably in a University.

Age: Preferably Between 45 and 50.

Qualification, experience and age requirements may be relaxed in the case of a candidate who may be recommended by the Selection Committee as highly competent for the post. Selection may not necessarily be confined to those who apply formally.

Six copies of application in plain paper giving complete bio-data of the candidate and attested copies of certificates and testimonials along with the fee of Rs. 5/- payable by crossed I.P.O. drawn in favour of the Finance Officer, University of Burdwan are to reach the office of the Registrar not later than the 21st November, 1977.

REGISTRAR

* * *

UNIVERSITY OF DELHI

Adv. No. Estab. IV/46/77

Applications on the prescribed form are invited for the posts of Assistant Registrars/Administrative Officers/Assistant Controllers of Examinations, in the Scale of Pay of Rs. 700-40-900-EB-40-1100-50-1300 plus usual allowances as admissible under the rules in force in the University from time to time.

Qualifications

A Second Class Master's Degree with 10 years' Office experience of which at least 5 years' should be in a supervisory capacity.

The prescribed application form can be had from the Information Office of the University either personally or by sending a self-addressed envelope (size 5" x 11") with postage stamps worth Rs. 2.55.

Selected candidates will have to produce the original documents relating to their age, qualifications, experience, etc at the time of interview.

Applications accompanied by attested copies of Degrees, other certificates, etc. should reach the undersigned not later than 31st October, 1977.

Note: 1. It will be open to the University to consider the names of suitable candidates who may not have applied. Relaxation of any of the qualifications may be made in exceptional cases, on the recommendations of the Selection Committee.

2. Canvassing in any form by or on behalf of the candidates will disqualify.

3. Those who had applied in response to the earlier advertisement, need not apply again but in case they have any additional information to supply, they may do so.

Delhi-110007

12th October, 1977.

REGISTRAR

SRI VENKATESWARA UNIVERSITY

Applications are invited in the prescribed form for the following posts in the University Service on or before 31-10-1977.

I. S.V. University College of Sciences

1. Lecturer in Physical Anthropology and Pre-historic Archaeology
1 (one)

II. S.V.U. College of Arts, Commerce and Law

1. Lecturers in Social Anthropology
2 (two)

Scale of Pay

Rs. 700-40-1100-50-1600.

All the above posts are temporary; but are likely to be made permanent. They carry D.A. etc. at the University rates.

There will be reservations for S.C./S.T./B.C. candidates according to U.G.C./State Government guidelines.

Prescribed application form and particulars of qualifications etc. can be had from the Registrar, Sri Venkateswara University, Tirupati-517502 on payment of Rs. 5/- either by Andhra Bank/State Bank of India Challan or by crossed Indian Postal Order drawn in favour of the Registrar, payable at the S.V. University Campus Post Office, Tirupati-517502 (Andhra Pradesh).

Money orders and cheques are not acceptable.

REGISTRAR-IN-CHARGE

Dated: 27-9-1977

* * *

PANJAB UNIVERSITY CHANDIGARH

Advertisement No. 27/77

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, by 8.11.1977 along with postal orders for Rs. 7.50 each for posts at Sr. Nos. 1 to 5 and Rs. 5.00 for the post at Sr. No. 6. Number of posts is indicated with the subject. Qualifications Essential and desirable be perused carefully.

1. Readers in Inorganic Chemistry-2
(Pay-scale: Rs. 1200-50-1300-60-1900)

Qualifications

Essential

- (i) A first or high second class Master's degree of an Indian University or an equivalent qualification of a foreign University in the subject of Inorganic Chemistry with bright academic record.
- (ii) Either a research degree of doctoral standard in the subject of Inorganic Chemistry or published research work of high standard in journals of repute.
- (iii) About 5 years experience of teaching post-graduate classes at University or college level and experience of guiding research.

Desirable

Specialisation: Inorganic Chemistry

especially in the field of Chemistry of non-aqueous solvents and fluorine, organo-metallic and co-ordination compounds.

2. Lecturer in Physical Chemistry-1
(Temporary)

Pay-scale: Rs. 700-40-1100-50-1600.

3. Technician-cum-Lecturer-1
(Department of Chemistry)

Pay-scale: Rs. 700-40-1100-50-1600.

Qualifications For Posts at Serial

Nos. 2 & 3

Essential

- (a) A Doctor's degree or research work of an equally high standard and
- (b) Consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degree in (a) and (b) above may be in relevant subjects. Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of a very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a doctor's degree or equivalent research work is not available or is not considered suitable a person possessing a consistently good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Explanation

1. Candidates for being eligible for recruitment to the posts of Lecturers must have a 1st or high second class (B in the seven point scale) at the Master's level and for determining consistently good record, average of 50-55% or (B in the seven point scale) may be expected at the two examinations prior to the Master's examination.

The following two examples would illustrate the above:

- (i) A candidate who has obtained 52% marks at the Higher Secondary/Pre-University/Intermediate and 58% at the Degree level would have an average of 55% and as such could be considered.
- (ii) A candidate who has obtained

60% marks at Higher Secondary/Pre-University/Intermediate and 50% at the Degree level would have an average of 55% and as such could be considered.

Desirable

Lecturer in Physical Chemistry

Specialisation in thermodynamics, statistical Mechanics & quantum Chemistry.

Persons having post-graduate teaching experience will be preferred.

Technician-cum-Lecturer

A doctoral degree or published work in the subject of Organic Chemistry.

Master's degree with 1st class or high second class in Organic Chemistry.

Persons with experience of handling spectroscopic instruments will be preferred.

4. Junior Research Fellows-3 (Rs. 400/- p.m. fixed each)

(Under UGC Programme of Special Assistance in the Department of Chemistry)

Qualifications

A first or high second class Master's degree preferably in Inorganic Chemistry

5. Research Scholars-2

(Rs. 400/- p.m. fixed each)

(Department of Biophysics)

Qualifications

First or high second class Master's degree in the relevant subject with bright academic record and aptitude for research.

6. Research Assistant-1

(Pay-scale Rs. 300-25-600)

(Department of Pharmaceutical Sciences)

Qualifications

A first class M. Pharm. degree.

Desirable

Some research/teaching experience

Candidates for the posts of Readers who do not possess a Doctoral degree are required to submit 10 typed/cyclo-styled copies of brief resume of their research/published work. Separate application should be submitted for a post in a different Department. 15% posts of Lecturers will be reserved for the members of the Scheduled Castes and 2% for the members of the Scheduled Tribes, but these will be filled up by others if no suitable Scheduled Castes/Scheduled Tribes applicant is available.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees, may however, send their applications on the prescribed proforma direct to the University. They may route another copy through their Departments. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the office of the Finance & Development Officer, Panjab University, Chandigarh, by making a written request accompanied with self-addressed stamped envelope of 23 x 10 cms.

University News

A CHRONICLE OF HIGHER EDUCATION & RESEARCH NOVEMBER 1, 1977 80 PAISE

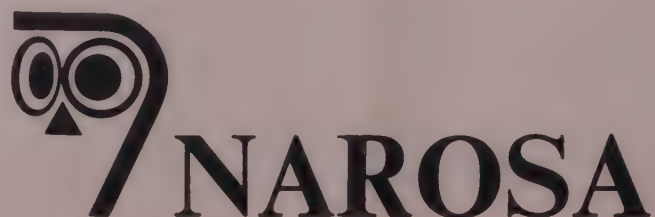
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Examination Reforms • Selective Admissions



Shri R. L. Anand, Director, NIS, presenting NIS Shield to the Prime Minister during the inauguration of the 7th International Track & Field Coaches Congress held at Patiala on October 10-13, 1977.

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UNIVERSITY NEWS

Vol. XV NOVEMBER 1
No. 21 1977

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Opinions expressed in the articles and reviews are individual and do not necessarily reflect the policies of the Association

Hony. Editor : ANJNI KUMAR

Democratic Experiment in Delhi University

Subrata Mukherjee

A very important and welcome development in Delhi University in recent years is the introduction of teachers' participation in college administration through the formation of Staff Councils in 1971, which is a mandatory body for each college under the university and which, according to the original ordinance, "shall be a decision-making body on all policy matters relating to the administration of the college".

This is the first time that the entire teaching staff of the colleges, including the librarian and the director of physical education, have been entrusted with the responsibility of running colleges. The decision is an important step towards democratisation as the Councils, according to the original scheme, is to perform all the functions connected with the college administration and is to formulate policies "within the framework of the provisions and regulations of the university in force from time to time."

The important functions of the Staff Councils are to be "(a) allocation of work-load of teachers and preparation of college time-table; (b) allocation of extra-curricular work of teachers; (c) formulation of recommendations on introduction of new teaching post(s) department(s) and expansion of the existing departments and other academic questions; and (d) formulation of recommendations on admission of students."

The Council's responsibilities also include formulation of guidelines regarding arrangements for the residence, welfare, discipline and supervision and organisation of teaching of students, in consultation with the appropriate students' organisations; and formulation of recommendations of extra-curricular activities, including cultural activities of students, sports, games, National Service Scheme and other social service schemes, academic societies, college canteen and other amenities, in co-operation with the appropriate students' organisations.

Besides, the Councils are entrusted with the task of formulation of policies and guidelines for allocation of staff quarters and financial assistance to teachers; making purchases of library books and laboratory equipment in consultation with the appropriate departments; and such other policy matters as may concern the functioning of the colleges.

As such, within the ambit of the university rules and regulations, the ordinance wanted the Staff Council to play a very crucial role within the university set-up, for the first time involving all the teachers and paving the way for collective decisions. The introduction of the scheme was welcomed by almost all those connected with the university, and it can be safely asserted that "the experiment" has, by and large, proved successful when judged in the context of the later developments in the university and the structural limitations inherent in the formulation of the Staff Councils.

The university, because of some mysterious reasons, instead of further extending the scope and position of the Staff Councils, along with increasing substantially teacher representation in other decision-

making bodies, like the academic council and college governing bodies, further restricted the jurisdiction of the Staff Councils by a subsequent ordinance, so much so that with the changes introduced the Staff Councils have lost most of their powers in decision-making. Only the secondary functions remain with the Council. This has made the office of the college principal much more powerful when the need is to bring this office along with other policy-making bodies within the overall purview of the Staff Council. This is more so because the most serious limitation of the scheme is the retention of permanent principals in colleges, though in the present scheme he is to function as "Principal in Council".

The second is that the scheme does not seek to replace the private governing bodies, which administer the colleges and though contribute only a fraction of the expenditure in running the colleges, are responsible for most of the inadequacies prevailing in Delhi University colleges.

Thirdly, the non-teaching employees have been given no representation in the Staff Councils and "the administrative staff of the college will not be within the purview of the Staff Council." This means that the Staff Council has absolutely no say regarding the non-teaching employees, nor are they associated with policy formulation in any way. Lastly, the association of students with the Staff Council is of a very limited nature.

The main lacuna in the system is the continuance of the institution of permanent principalship, which goes against the spirit of democratisation. A defiant principal can always defy the Staff Council and by his power of patronage and permanent tenure may, if he so desires, jeopardise the functioning of the Staff Council and its various committees.

If the Staff Council is to be the ultimate and responsible decision-making body in the college, the first pre-requisite is the replacement of permanent principalship with principalship by rotation. This will enable all the members of the Staff Council to function without any interference from a particular person who may not see eye-to-eye with the functioning of the Staff Council.

This principle is also desirable from another point of view, since all the important offices in the university rotate and have a limited tenure, the institution of permanent principalship is an anachronism in the present-day university structure. During the emergency, this special status of the principal received a further boost and a powerful principals' association came to the limelight and the whole concept and spirit of the Staff Council was ignored. So much so that even when in a well-known campus college when 70 per cent of the staff requisitioned a meeting of the Council, no meeting was called and the principal concerned took all the decisions by himself, in clear violation of all the statutes and conventions of the university.

The unhappy situation obtaining in this college for the last few months would not have arisen, if the principal had accepted democratisation in its true spirit and acted according to the spirit of democratic functioning. On the contrary, he has never co-

operated with the Staff Council, has refused to call meetings at regular intervals and discuss important policy matters at the Council.

Moreover, the principal happens to be the ex-officio chairman of the Staff Council and there is no means by which he can be censured, even if he decides not to co-operate with the Staff Council. The principal also has emergency powers and the decision on what constitutes an emergency is left entirely to him.

Thus, although the Ordinance clearly states that "within the framework of the provisions and regulations of the University in force from time to time, the principal in the administration of the college shall act as principal-in-council" the principal, if he so desires can act otherwise.

For example, in spite of the recommendation based on a criterion applicable to all departments of the New Teaching Posts Committee in a college, the principal has virtually rejected its recommendations and is allowing for the last so many months, two more lecturers to continue in the Department of Hindi, above the sanctioned strength of eight. Such whims and fancies of the principals are not exceptions. The crux of the matter is that to make the Staff Council effective one of the most important pre-requisites is the acceptance of the idea of principalship by rotation.

The second most important limitation of the Staff Council is that its introduction does not eliminate the major evil of Delhi University college—the private governing bodies. The Staff Council do not replace them, but only remain subordinate to them because they do not enjoy any power which vests with the governing bodies. The governing bodies, making only token contributions in the running of the colleges continue to enjoy all their rights and privileges and teachers continue to remain only employees though the Staff Council is a decision-making body in many aspects of college administration.

The Staff Council being subordinate to the governing body, and the latter continuing with their present composition, seldom does a congenial atmosphere prevail in the colleges. No opportunity seems to be missed by the governing bodies to harass teachers and non-teaching employees. Even a strictly personal thing like an inter-communal marriage may earn the wrath of the governing body. Moreover, bogies like the "minority colleges" continue to be raised by certain sections with active support of some governing bodies, even though this is opposed by an overwhelming majority of the teachers of Delhi University.

There is little doubt that democratisation of the University structure is a measure that has come to stay and the first move in this direction, the creation of Staff Councils, has the overwhelming support of teachers, non-teaching employees and students. What is now needed is to make the Staff Council a real decision-making body with the participation of teachers, students, non-teaching employees and may be representatives of the alumni. What is called for is a wholesale change, including the composition of the university departments, revitalisation of the federal structure of the university with more participation of the college teachers in postgraduate teaching, includ-

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Examination Reforms : A Plan for Action

M. H. Jagdale*

The University Grants Commission has explored various ways and means of raising the standards of teaching and has suggested examination reforms as a major reform requiring immediate attention. Any reform, contemplated to improve teaching, though desirable, would not bring about expected results unless our present out-moded system of examination testing only memorised knowledge of the student is replaced by a better and more dynamic evaluation system. After this is done, we can introduce changes in the methods of teaching, learning and the coordination between teaching, learning and testing can be brought about more effectively.

In this context, the Chemistry Department of Shivaji University has introduced from June 1975 a promising examination system at the M.Sc. level. The scheme was originally proposed by the present author and Dr. V.M. Parikh, Visiting Professor from Notre Dame University, B.C., Canada to the University authorities. The proposal coincided with a call from the Prime Minister, Chief Ministers and many eminent educationalists of the country for Examination Reform, in view of the manifold problems posed by the original system. The new system will evaluate not only the extent to which the students have been able to grasp the subject matter but also test their ability to make use of their knowledge. Key goals underlying this reform include (i) restoring the confidence of the students in their educational and evaluation processes, and (ii) to raise the image of the educationalists in the eyes of the students and the public.

Aims of Education

The effectiveness and the long lasting usefulness of a graduate to the society will depend upon the (i) proper curriculum design (ii) the efficiency with which smaller units of the curriculum are taught and grasped, and (iii) the overall assimilation of the entire syllabus of study by the student. While considering any reforms in higher education, one must work backwards by first establishing the aims and goals of a particular course of study and determining the best course of action to achieve these goals. The basic aim of science education for example, is to develop in the nation an ability to tackle and solve the manifold problems facing society and humanity at large. A science graduate so trained should be able to isolate a problem, analyse it, hypothesize probable solutions to it, and be able to solve or at least to suggest the most effective strategies for solving the problems. His analytical mind should even be able to foresee the problems that society may encounter in the future if a particular course is followed by the society. Such an analytical ability cannot be developed in a society whose educational system is based largely on stuffing the student with a huge quantity of

irrelevant data and on evaluating broadly his ability to memorise this data.

Education should be closely related to environment, in such a way that it would promote the basic values of humanism, democracy and socialism and help in creating a new egalitarian and just social order, develop the personality of the individual in order to maximize the realisation of his potential and his commitment to social good, stretch the need for an individual to exert himself to the utmost through discipline and hard work, inculcate in him habits of self-study with a view to enabling every individual to be a life long student and emphasize competence and performance rather than attainment of degrees or certificates. Furthermore, access to higher education should be provided not only on the basis of merit but also in keeping the principles of social justice, and institutional facilities for full time higher education should be regulated broadly on the basis of manpower needs or employment opportunities.

Teaching and Examination Plan

According to this system, a comprehensive plan of teaching and assessment (internal tests) of all the papers was made and distributed to the students at the beginning of the semester. Each course or paper was divided into some four to seven units, with each unit comprising a unified topic and satisfying a set of precisely defined objectives. A reading list consisting of chapters with page numbers from at least four to five books along with research references was given for each unit to define the exact scope of the unit. Each unit was taught over a specific period of time as the teaching plan supplied to the students and within a week after its completion an hour long test was administered. After every test the teacher who has taught the unit and who is also the examiner puts up on the notice board model answer with a detailed scheme of marking. Students' answers were marked on the basis of the model answers and returned to them early. As a means of instant feed-back of their abilities and understanding the students were encouraged to compare their answers and marks not only with the given model but also among themselves. Thus, the student could see precisely where he erred and, by checking with the model answers, note exactly what is expected of him. He also could observe whether his script had been corrected properly.

For each paper (course) such internal examination carried 75% of total marks and the remaining 25% marks were allotted to the final examination. The final examination, in fact, was treated as a test, except that this examination covered the entire syllabus. Paper setting and marking of scripts at this test was done entirely by external experts. Passing at this or any other individual test was not mandatory. However, the students were required to obtain

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a minimum total of 40% of the marks in combined internal and external examination.

The total number of marks for the periodical unit tests was 75%. This weightage was necessary for making the students give them the due importance. If this percentage was reduced the students would not care for these examinations, nor would they prepare seriously for them.

The course teacher was obliged to prepare model answers (preferred answers) and put them up on the notice board after every unit test and mark the answer papers accordingly. The teacher himself answered these making sure that he was able to answer them in about 2/3 of the time allotted to the students to answer. In a system, where the model answers are posted and the marked answers books are returned to the students, malpractice of any kind and even human errors in marking are taken care of because the students can compare their answers and marks with those of their classmates and make an immediate appeal to the professor concerned.

An elegant but simple appeal procedure further removed any chances of error or corruption. The lower level of appeal for the aggrieved students was the professor concerned. Where the professor himself corrected any errors in his markings. A human error in marking, therefore, posed no problem. If the student is not satisfied at this level he can appeal the Head of the Dept. Equipped with the model answers, the Head can usually settle the issue. However, if the complaint is not redressed at this level, he can seek justice in the hands of an independent vigilance committee set up by the Vice-Chancellor. The aggrieved students as well as the aggrieved professors, and even the Heads who feel that a particular professor had not taught his course with the required diligence and rigour can present their cases before this committee. For example, if there was a wide difference between the marks scored at the external examination at the end of the semester and the internal examination, the professor concerned is answerable to this committee. The vigilance committee was empowered to recommend strong action against a professor in cases where a malpractice was established. But such a possibility was very unlikely as the formation of such a committee itself acted as a deterrent to any possible corruption.

Therefore, there was no scope whatsoever for any kind of partiality in marking at these examinations. No pressure could be brought on the examiners. He was bound by law and need not succumb to any kind of pressure. Moreover, this above board approach towards evaluation was of crucial importance in restoring the student's confidence in his educational process.

Defects of the Old Examination System

The very nature of the present annual examinations system is such that the examiner has only 3 hours to find out what the students have grasped during the past whole year or a Semester. The future of the students depends upon what he writes in these three hours. Therefore, he is tempted to prepare selected topics and the object of the study shifted from the legitimate one of getting knowledge to merely

facing "The three hours" ordeal successfully. It is impossible to imagine how a student can display the knowledge he has acquired through the entire years within 3 hours. Real study has no place in this system. It can lead to disappointing results. No distinction can be made between a student who studies consistently throughout the year and the one who prepares just some selected topics. A student going through such a system develops a feeling that marks are more important than education, memorising data is more useful than understanding, and, in the final analysis, luck and manipulations take precedence over regular study and hard work. Assessment of real knowledge is impossible in this set-up. Furthermore, such a short evaluation time forces the paper setters to design questions which are very broad, stereotyped and vague so that a superficial evaluation rather than the precise in-depth analysis of the students abilities, can only be carried out.

Advantages of the Unitized System

The salient features of the system are:

(1) A very high percentage of students, under this system, secure higher-divisions in the examinations. The percentage of failures is reduced almost to zero. The main reason for this is that during the course of the year, under this system, the student studies every bit of the syllabus very carefully. No part of the syllabus is left either because it is incomprehensible or difficult.

(2) The periodical tests, which are very frequent, indicate to the student his day to day progress, and hence the average student tries to make progress by sustained efforts as a result of which his success is assured.

(3) Since the student develops the habit of regular work he is not tempted to use questionable means.

(4) The system creates confidence in the student to handle independently any new topic he is required to in his future life.

(5) Both students as well as professor become more industrious in their respective spheres.

(6) The system may prove quite exacting to the teacher but if he is equal to the task he derives immense satisfaction from being able to guide his students competently.

(7) In this system the student learns to depend on himself both during the course of his studies and at the time of examination and so there will not be any need for guide-books or coaching classes.

(8) As the final examination in this system is completely in the hands of external examiners from another university it keeps everyone on their toes because any adverse report from a faculty member of a rival institution is not to be taken lightly.

Central to this system, besides frequent tests is that the nature of the tests has changed. In this system, it is almost impossible to depend on the vague essay type, memory oriented questions. Such vague questions call for vague answers which are difficult to mark very precisely. The teacher too cannot be very precise in putting up the model answers. Consequently, when the corrected answer books are returned to the students, the teacher finds it extremely difficult to face the music and to justify his marking. The need

for precision in marking therefore calls for very precise, well defined objective questions which can test a student's grasp of the subject than his memory.

It may not be out of place, here to point out a general misconception regarding "Objective questions". A question paper with short, one or two mark questions which require very brief one word one line answer is not necessarily an 'Objective Test'. If the exact aims and objectives of a particular course of study are well defined, any set of questions, short or long, designed to determine the exact degree to which prescribed objectives have been achieved can be considered as an 'Objective set of questions'. In fact the new system makes it virtually obligatory for the teachers to devise objective tests concerned with comprehension. In addition, both the fear and luck factors with a single all important examinations are effectively minimised.

The new system calls for a very careful teaching plan and an open evaluation almost from the beginning of the academic year. This instant feedback continuously informs the students of their strengths and weaknesses and helps them to improve their abilities in the subjects gradually. Even the slow learners and those with less than average abilities strive very hard and manage to reach the pass camp. Teachers are able to identify and help these students fairly early in the year. The students too realise the need for help and the overall performance therefore gradually improves and the failure rate goes down to a negligible level.

As the units are interdependent, a proper study of the previous unit or units which this system ensures is of great help in the understanding of the subsequent difficult units. Thus, if foundation is well laid the superstructure erected thereon will naturally be strong. Therefore, the student will be able to make good progress in his studies.

Further, it also helps the department to weed out students, right in the beginning of the Semester who are never likely to succeed before they waste too much of their own time and their country's money. This may sound callous, but there is no point in allowing students to proceed to a new session before they have mastered the work of the previous one.

The experience with the unitized system is that a desirable change has taken place in the attitudes and study habits of the students of the Chemistry Department. Students have realised that a degree certificate in itself is no more than a piece of paper and the possession of it would not help them in getting the jobs in the market unless it is backed by a real knowledge of the subject. In this system every unit is carefully taught and because of impending tests, is properly studied by the student. The student is engaged in study throughout the year and the teacher too is continuously engaged. Both have some sense of achievement.

Yet another merit of the unitized system is that it involves improvement in teaching. Since the teacher has the responsibility of defining the objectives of a course, compiling a comprehensive reading list, and above all, carefully designing as well as precisely answering internal tests, it is inevitable that the teacher's knowledge and experience are augmented and his teaching consequently improved. Furthermore as the tests are concerned with understanding, the tea-

cher will be led, either through self realisation or by his own sense of responsibility or by the student's questions, to explain topics concisely and thoroughly. And finally, the teacher is now fully accountable for the training and grades that the students receive, and thus for the reputation, of the Department and the University. Under such circumstances, the teachers would feel compelled to work hard to establish a good reputation for themselves and their institution. The present author believes that after working with such a system for three to five years, the teachers will have complete mastery over their subjects and will start taking genuine interest in teaching and research in their own fields. This will certainly help the University in producing better quality of graduates and the researchers. It is upto us to convince the public that the service to be offered to them in the form of University graduates justifies the cost involved. In the final analysis, this is an Essential requirement for restoring the dignity of teachers and their profession.

The Future of this System

The ultimate success of this system depends on how its products fare in life. This system ensures that students get exactly the number of marks they deserve. There may be some discrepancies in marking in other systems but it is out of question in this system. Even if the marks obtained by the candidates at the internal and the external examinations put together is lower than what might have been gained under other systems, their standards of achievement are much higher. If then, the new system is flawless, useful and practicable, it is only fair that the other universities and colleges should adopt it. Otherwise, the efforts of those who have been prompted by high ideals in instituting this system will go waste and they will be disillusioned. If on the other hand, the successful efforts of one university are emulated by other universities, it would revolutionize the system.

To sum up, reforms are needed to cope with our rapidly expanding educational system. The old annual examination system is no longer useful and therefore, a system based on internal assessment allowing each institution to find its own level of reputation, is proposed. The University Grants Commission and the Education Ministries can provide the necessary assistance and incentives to help the institutions maintain and raise their standards. However, funds could also be withheld from those institutions which fail consistently to maintain minimum standards. The government is requested to use mild pressure, if necessary, to make our education system more productive and our educational expenditure more effective. The student organizations everywhere in the country should also examine this plan which aims at removing torture of final examination and which also paves the way for a sound and effective education that would ultimately brighten the professional career of future graduates.

Finally the author feels that the implementation of such a self regulatory system would help in developing the spirit of "Work is worship" and the sense of commitment in both the teachers as well as the students, which is the need of the hour. □

Selective Admissions

Dr. P.C. Chunder, Union Education Minister, delivered the convocation address of Poona University recently. He said that it is unfortunate that the normal functioning of our educational institutions is often disturbed. This is mainly due to the unplanned and uncontrolled expansion, sharp rise in educated unemployment which saps student motivation, fall in teaching standards, inability to provide even the minimum essential facilities and services in a large number of educational institutions at these levels, end frequent unacademic disturbances and agitations which are often engineered by vested or anti-social interests. For quite some time our campuses have been disturbed and in some places, these disturbances have become almost endemic. Apart from the loss of valuable property which this often involves, an

—a restraint observed by lay and political elements which should realise that non really gains, and least of all the country, when such disturbances occur in the normal life of educational institutions,

—a sympathetic but firm administration which does not yield on principles and does not hesitate to use a minimum of force when absolutely essential, and

—a planned, concerted and collaborate action on the part of all concerned.

Here, as Gandhiji said, the means are as important as the ends; and a restoration of normalcy to educational life through these methods can, in itself, be a great education, not only to the students and teachers, but to all agencies involved in the process and to the society itself.

The efforts to restore normalcy will be greatly helped if we simul-

ensure that they attain an optimum size where costs per student are reduced and efficiency is increased. The courses taught in colleges and universities have also to be regulated because an indiscriminate opening of such courses without insistence on minimum enrolments leads to high costs and waste of resources.

It has been argued that, although this rigorous control over the establishment of new institutions and courses, careful planning of their locations, and rationalization of existing institutions and courses is desirable and necessary, it is not sufficient and that we must go a step ahead and regulate enrolments as well, through selective admissions, if possible. The selective admissions are already in vogue even at present in all cases where the seekers of admissions exceed the seats available (e.g. in Institutes of Technology, medical colleges, university departments, and prestigious and high quality institutions). The real issue is whether this policy should be generalized for all secondary and higher education and whether the overall enrolments at these levels should be regulated on the basis of employment opportunities and manpower needs. The problem is not new and has been on the anvil for more than fifty years. But it has obviously become very significant now, in view of the tremendous increase in educated unemployment. The problem also gets easily delimited because there is no question of introducing selective admissions at the beginning of the secondary stage (when the students are too young) and because the need of selective admissions are largely accepted, on grounds of quality, for postgraduate and research work.

In practice, therefore, the issue boils down to selective admissions at the higher secondary and first degree levels in general education only. It is probably both desirable and necessary to regulate the uncontrolled expansion of enrolments at these stages. The first is the theoretical argument that the desire of a young and qualified person to study further should not be denied on the only ground that he is not likely to get a job,

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irreparable loss of precious time and waste of money and energy occurs when normal teaching is interrupted, scheduled examinations are not held in time, or conducted with scrupulous vigilance, and the basic process of education itself gets adversely affected or becomes dysfunctional. We all have to see that peace is restored in the campus so that the normal life of the educational institutions is resumed and continued undisturbed.

Dr. Chunder said that the system cannot even survive if the desired objectives are not achieved through:

—internal and self-assumed discipline by students and teachers,

—a reform of the educational programme itself to make it more relevant and meaningful,

—a dynamic and dedicated leadership,

taneously strive to reduce the effect of the factors which contribute to this malaise. Among these, we would like to accord high priority to the control of the haphazard and rapid expansion that now takes place for lack of proper planning and rigorous implementation. There should be proper restraint on the establishment of new secondary schools and colleges and more such institutions should be permitted in under-developed areas where a strong justification for their establishment exists. Similarly, proposals for the establishment of new universities should not be taken up unless they are clearly justified on the grounds of academic need and improvement and unless adequate resources are available. Even the existing institutions have to be rationalized to the extent possible and efforts have to be made to

especially if such desire does not involve a subsidy from public funds. Secondly, many a young boy goes in for further education at these stages because he does not get a job and a girl does so because the age of marriage has risen. While no one argues that education should become a substitute for work or marriage, one cannot ignore altogether the practical problem of what these young persons should do to keep themselves occupied. But above all, strong pressures are exercised, by the less advanced and weaker sections of the community who argue that their access to higher education (which is their almost exclusive channel of vertical mobility) will be severely restricted by selective admissions. On the other hand, one cannot also ignore the growing menace of educated unemployment or the need to conserve the available resources for more urgent needs, especially those of qualitative improvement. The only way out, feasible though not neat and tidy, is a package deal consisting of: proper regulation of institutional facilities for full-time instruction at the higher secondary and university stages on the basis of need, availability of resources and maintenance of standards; adoption of selective admissions, wherever the applicants exceed available places; introduction of reservation of seats on an adequate scale for all weaker and less advanced sections so that their access to secondary and higher education is not adversely affected and even increased, if possible; expansion of facilities for self-study by throwing open all Board and University examinations to private students; and organizing correspondence courses, programmes on the radio and television, and other forms of part-time or non-formal secondary and higher education efficiently and on as large a scale as necessary.

Our policies for the regulation of expansion in secondary and higher education in the next plan will have to be based on these broad principles. Their success will be greater to the extent we succeed in diverting students in different walks of life through vocationalisation at the secondary

stage or by delinking jobs with degrees to some extent.

Far more significant and difficult problems arise with regard to the relevance and meaningfulness of higher education and the raising of standards. Among these, the following may be mentioned:

(1) The curriculum of the ten-year school is over-crowded with subjects and over-loaded with information and is more oriented to creating memory machines than to personality development. This load has to be reduced and more time found for work-experience, physical education, games and sports, cultural activities and community service. Action on these lines is being taken.

(2) It is obvious that the same liberal, university-preparatory, general secondary education is not suited to all students, especially at the present levels of expansion. A diversification and channelising of a large proportion of students into vocational courses that will lead to useful and productive employment is a must. But in spite of all efforts made for the purpose over the last so many years, the problems of popularizing these courses, finding out fresh avenues of employment, designing suitable courses, training teachers, providing equipment, etc. are still baffling us. Ways and means have to be found to have a much greater involvement and support from industry. A more resolute and intensive effort, including a good deal of planned experimentation, is needed in this area which should continue to receive priority attention.

(3) The existing undergraduate courses are mainly structured as preparatory to postgraduate studies, and are over-weighted with an almost academic introduction to some disciplines. They need to be restructured to meet the diversity of student needs and new social objectives, especially because 95 per cent of the students at this stage do not go in for postgraduate studies. It is desirable that every student at this stage is given general education relating to such important themes as social and economic life in India, our struggle for freedom and for national development, scientific method and science and

technology. He must also be required to do some field-work and gain practical experience related to the subjects of his study and participate in some meaningful and challenging programmes of national development such as adult education. This will provide a more rounded and richer education.

(4) It is essential that all educational institutions develop meaningful programmes of community service. In higher education, all universities should have all the three functions—teaching, research and extension—and should place an equal emphasis on them.

(5) The methods of teaching and evaluation will have to be radically changed; the lecture method which now dominates the scene should be given its proper place; and the emphasis should shift from teaching to either self-learning or to dialogic learning through seminars and discussions.

(6) The current emphasis on development of postgraduate work and research, both fundamental and applied, as well as the emphasis on the development of science and technology suited to our needs and programmes of national development will have to continue.

(7) Standards in education, depend, first and foremost, on hard-work and dedication. We must therefore try our best to create such a climate in all our educational institutions and especially in those at the university stage which set the pace for the entire educational system.

Good administration is unfortunately scarce in education, and the weakness stares one in face in the university system. Vigorous and well planned steps are needed to improve administration of secondary and higher education and we hope to highlight the programme over the next plan period.

The financing of secondary and higher education also presents several problems. The systems of grant-in-aid needs a review, especially those for affiliated colleges wherein heavy strains have been created by the introduction of new scales of pay. The excellent lead given by the Government of Gujarat in this regard needs attention of other Governments.

There is also a case of curtailing of wasteful expenditure and effecting economies (while improving standards) through measures like co-operative teaching. The planners have been arguing that the subsidies which go to the rich and well-to-do classes (who have a lion's share of facilities in secondary and higher education) should

be reduced and that while fees for the poor should be decreased or abolished, those for the well-to-do and the rich should be increased. All these problems need attention on a priority basis, especially in view of the fact that the new priorities will make the financial situation in secondary and higher education still more tight. □

Aspirations of younger generation

Dr. Ashok Mitra, Minister, Finance, Development and Planning, Government of West Bengal delivered the convocation address of the University of Madras this year. Excerpts from his address are reproduced below:

"This day belongs to the young graduates, and in my brief remarks I will address myself primarily to them. Their generation is the source of my envy. Unlike myself and my contemporaries, they have been born in an independent country; their thoughts, reflexes, feelings, emotions are not haunted by the externality of colonialism or imperialism. I often wish I could sneak my way in and become familiar with the working of their mind. It must be altogether different from the way our mind operated when we were students in the thirties and forties. I realise that this feeling is perhaps reciprocal, and my young friends feel equally estranged by the manner of approach of our generation to national issues and problems. My appeal to them would be to, please, bear with us. For, imperial subjugation is an experience which cannot be altogether described. You either live through it or you do not. You can, *ex post*, read about its humiliations and indignities in books and reports and documents. What you learn thereby is second or third-order knowledge? Such vicarious knowledge cannot but suffer from an ersatz quality.

Consider our circumstances in those dull, grim pre-Independence days. Tenacity writ large across our heart, we did fight the alien power which had put us in dungeons. None-theless, a streak

of inferiority complex was our particular heritage. We opposed the British, plotted and conspired against them, but we also had a sneaking respect for them, a respect similar to what was proffered by a feudal serf toward the manorial lord. A considerable number amongst us would exhibit a diffidence—diffidence which is the hallmark of people who knew that they did not control their own destinies, who knew that they did not make the crucial economic decisions affecting their lives and living, who know that, upto a point, they are mere marionettes, the coordinates of their acts and activities being determined by others.

It is a different climate now, the texture of the sky is totally transformed. The new generation—those to whom the young graduates, who are today passing out, proudly belong—are not hemmed in by difficulties of the kind which bogged us down. Whatever else one may say, politically we are an independent entity. True, political decisions, are invariably linked to, and follow from economic decisions, but the latter are these days in the main the prerogative of groups and individuals who are very much part of this nation. There is of course no dearth of quasi-attractive theories which passionately weave a tapestry of exploitation on a world-wide scale. All honour to such theoreticians, but in our case, we are, let me suggest, perfectly capable of producing our own set of exploiters, and thus need not look up to either the former colonial powers, or to other external agencies, for filling in the role of villain.

It is an independent nation, and our young graduates are the standard-bearers of a glorious sovereignty. The shadow that falls is however of a different genre. It is an independent nation, but not a homogeneous one, and here I am referring not to the regional and linguistic fissures which occasionally claim the headlines. It is a divided nation, because, as I have just said, economics is the prime determinant of each major decision in life. The economic frontiers separating the different sections of the community make this nation a heterogeneity.

This poses a challenge the nature of the challenge is however different from what those belonging to our generation had to face. How does one mould this heterogeneous nation together, hold it together? Where different interests are involved, most economic decisions arrived at are the outcome of a continuous series of bargains and counter-bargains. A bargaining process is also a competitive process. This is where most of the problems emerge. In our society, competition is not generally on even terms; on the contrary, most of the time, it is uneven and unequal. The bargaining capability of a class is related to the size and composition of the assets it owns, or it has come to hold. Asset formation conforms to a certain historical law. Those who have assets can build upon them, expand them, multiply them, over and over again. This has to be so, for assets are the source of income, income is the source of saving, saving is the source of additional asset creation. Once, by happenstance or otherwise, you come to acquire some assets, your day is made. Given a modicum of application, and I am tempted to add, lack of social conscience, you can, from them on, move rapidly to higher and higher levels of accumulation, wealth, income. In contrast, those without assets will be denied the opportunities of advance, including the opportunities for education, for gainful employment, for earning a decent income. Since income is non-

existent, for them there can be no saving out of income, and since they cannot save, they remain without the benediction of capital formation. They begin being assetless, they continue to be assetless.

This, alas, remains the principal problem for the nation. Other issues such as linguistic heterogeneities and regional disparities in income and wealth are, I submit, of a derivative genre. For instance, if the farming classes in a wheat-growing State happen to be richer than those in a rice-growing State, the answer to the riddle may lie in the fact that the average size of the holding in the wheat-growing State is larger than in the rice-growing one. It is the size of the holding rather than the spatial location which is the crucial factor. If an artisan in Coimbatore finds the prospects foreclosed for him, while his counterpart in Jullundur forges ahead, the reason could simply be the capital accumulated by the latter in the past as against the lack of funds on the part of the former. In any case, the community of interests among the rich farmers or traders or industrialists transcends the boundaries of regional or linguistic loyalties. The asset-holders of the world always unite and act in concert. Unless the problem can be tackled at its source, namely, in the maldistribution of assets and opportunities as between classes, piecemeal attempts at removing inter-regional inequalities are unlikely to make much headway.

To the young friends who are graduating today I would, therefore, make a plain and simple appeal. They are the luckier ones in society. They have the exceptionally good fortune of being the end-products of a university education. Education is a precious asset; seventy per cent of the nation is denied the possession of this asset, even in its most elementary form, despite the lapse of thirty years since Independence. University education is an even more precious asset. Those receiving their degrees and diplomas today constitute the nation's elite; they

are a privileged group; they are among the major asset-holders in society. They will now enter the murky area of market-bargaining with their advantage of superior knowledge and skill, they will easily outbid those who have not been as lucky as they are. Without their even quite realising it, they will be instrumental in aggravating further the existing social and economic inequalities.

True, I should not generalise. Not all of our bright young graduates will be equally fortunate. In some parts of the country, industrial and commercial growth has screeched to a halt, casting a shadow on employment prospects. This aspect of the matter is not to be underrated. Even so, those with a smattering of university education or technical skill stand a much better chance of obtaining gainful work than others who have not had this opportunity. Sooner or later, those who have accumulated learning will forge ahead. Sooner or later, they will succeed in earning an income which will be a significant multiple of what those who have been denied educational opportunities will ever be able to enjoy.

The emerging inequalities can and will take diverse forms. It will have its regional as much as its linguistic manifestations. Sometimes, these inequalities will appear in the garb of caste differentiations too. But, scratch the surface, and you will confront the overriding reality: aspects of caste, religion and language are really so many veils, they conceal the more fundamental fact of economic disparities.

What our own dreams and aspirations were when we were students, or were about to cease to be so, in the mid-forties, may not be considered as terribly relevant in the context of today. If our ideological fads are to be spurned by the younger generation, so let it be. I would rather sit down with the young ones, and pry out of them their view of the world, the world which is their special heritage. But is it not precisely their world that I

am describing? Can they really get away from the fact of the non-homogeneity of class interests? In the kind of polity built in India in the course of the past thirty years, the overwhelmingly large part of the nation's assets has been monopolised by a microscopic few. So too it has been with the asset with which those assembled here today are more directly concerned, namely, education. Few amongst the nation's millions were able to secure educational opportunities during this period, particularly few amongst those who belong to the working classes. The proportion of those without letters in the total population has diminished only marginally since 1947. Priority has belonged to elsewhere, and not to universal education, whatever the edict laid down in the Constitution. In the allotment of educational funds from Government sources, the bias has been pronounced outspoken, overt elementary education has invariably been considered to be a marginal, dispensable issue. Each time a shortage of resources has occurred, the axe has fallen on the allocation for primary education. The corresponding allocations for higher education, including, let me add, management education, have not suffered or have suffered only insignificantly. Education has remained a hoardable asset, to be deployed only for the edification of the few. Through random accidents, outsiders have every now and then succeeded to pierce the class barrier and force their way into the charmed circle of the educated, as a result, they have made it good, they have in due season been absorbed into the establishment. But this has happened only with a limited number the overall social disparity in the endowment of education has widened with each year.

In any epoch, the ideas of the ruling classes become the ruling ideas. Those who ruled the land throughout these years perhaps had considered it prudent to keep the poor away from learning, perhaps on the principle that a little learning is a dangerous thing. But to pursue with

this policy would be disastrous shortsightedness. For one thing it is sheer illusion that the economic growth of a country can be furthered where 70 per cent of more of the population remain beyond the pale of literacy. The denial of educational opportunities would imply the denial of opportunities to participate in the process of development itself. It is not only that a proper technological environment would fail to develop; the efficiency of labour too would lag behind. The problems on the demand side would prove equally interactable. Since nearly three-quarters of the nation would have little of income, they would be in no position to contribute to the growth of the market which could help the economy to expand. The demand for mass consumption goods would taper off, the luxury demand of the upper classes would not compensate for that, stagnation would stalk the land.

None of these is speculative. It is a description of where this country has already arrived. And if the preponderant sections are left out of the process of economic growth, they will not necessarily standstill. They will not wait for ever, they will not wait for the governing classes to change their mind and condescend to provide the poor with some morsels of education. The poor are a wizened crowd, they have a way of learning, even if it be the hard way. It may take a while, but there is such a thing as percolation of ideas. It is an imperfect world knowledge, too, is imperfect. Even so, sooner or later, the poor and the deprived will learn on their own, and without the benefit of any formal education too, the fundamental issues underlying the problem of poverty. They will learn about the phenomenon of asset-structure, they will learn how asset are created in the first place, how assets are denied to some sections even as other sections keep adding to them. Such knowledge will not respect any contours of class or clan, caste or language, region or community. By its very nature, this knowledge will

be subversive. It will be an asset for those who hitherto had none. Those who come to acquire this asset will seek to deploy it for countering those others who believe in the *status quo*. It will be the precursor of tension in the system. Tension, acrimony, bickering, jealousy, hatred: such will be the inevitable linear outcome of the development which I apprehend.

I said earlier that I envy the young graduates who are to-day passing out. Do I really? For them, it will, I am afraid, be a very unquiet world. They may, each of them, obtain a position. They may, for some while, become part of the distinguished establishment. They may reach upto the sky. But, give or take a few years, history will catch up with them. History has a rather strange way of asserting its own laws. It is full of surprising nooks and corners; its inherent logic however always remains unimpaired. This logic says that it is an unequilibrated system where, for years and decades on end, assets and opportunities continue to be mal-distributed. Pressures are bound to arise in such a system, rebellious impulses are bound to rear their head, and these impulses can take all kinds of unpredictable forms. These forms are unpredictable only in the sense that one cannot foretell either the timing of their occurrence or the nature of their frequency.

To the young people of to-day, who have had the immense good fortune of receiving a university education, I therefore have a single word, not of homily, but of friendly suggestion. They must enjoy life, relax, do their duty by their near and dear ones. At a certain juncture, though, they must also learn occasionally to step out of their immediate environment, from their milieu of careers and promotions and secure livelihood; this they have to do for their own sake. If they want to avoid a future convulsion whose impact they would be unable to contain, they must themselves, on their own, think in advance, plan in advance, execute in advance tasks which

may currently appear to militate against their own class or group interests. If they want to survive in this heterogeneous society of ours which is India, they can do so only on the basis of an understanding reached with those who are at the moment beyond the pale of privilege. They can ignore only at their own peril a certain minimum awareness of the social process: assets that you corner to-day may be to your advantage at this instant, but once you take into account the long-run consequences of such assets-hogging, you would rather do without them. If it is conceded that a tranquil climate is a major factor contributing towards rapid economic growth, one must then be prepared to pay the exchange value of this tranquility: it can be had only if assets are reasonably distributed.

But how does one shed assets? How does one disinvest one's capital asset of education? It is not so much a question of shedding what one has, but of allowing others to share it equitably. Human nature being what it is, few feel like voluntarily diffusing their power and influence. There are also those who genuinely believe tomorrow to be as distant as eternity. This is hardly so. The system will be subverted from both within and outside, if the entrenched ones refuse to give up their privilege, at least in part, and on an immediate basis. The choice is theirs. It is for ensuring their own survival that changes must be brought about in the edifice, and some of the opportunities begin to flow towards the direction of the wretched of the earth. The alternative is a holocaust whose implications fail the imagination. If you want to avoid subversion, therefore, my suggestion to each of you, my young friends, would be; come, preach some subversive message yourself. It is only through subversion that you can survive. This is then the final thought I want to leave with you: be subversive, there is no greater way for you to serve society, there is no greater way for you to serve your own self-interest either."

Calcutta Courses in History of Science and Technology

(From Our Special Correspondent)

The University of Calcutta would soon introduce a postgraduate course in History of Science and Technology. The M. Phil degree would consist of one academic year. A committee has been formed with Dr. Sushil Mukherjee, Vice-Chancellor of Calcutta University as the Chairman. Besides the Pro-Vice-Chancellor, Calcutta University, the other members are: Prof. Chanchal Kumar Mazumdar of Physics Dept; Dr. Sachin Ganguly of Philosophy Department; Dr. B.B. Ganguly of History Dept. and Shri Samenendra Nath Sen, Registrar, Indian Association for the Cultivation of Science. Prof. A.K. Sarma, Head of the Department of Botany, Shri S. K. Basu,

determined by the Syndicate on the recommendation from the Board of Postgraduate Studies in History of Science from time to time.

The students will be eligible for this course if they are: M.Sc. or M.Tech in any of the science subjects, M.A. in any subject provided the candidate has passed B.A. examinations with a subject in any branch of science, Equivalents recognised by this university. The selected students will be given a fixed monthly stipend of Rs. 200 approximately.

There is wide scope for research in this field of science. The university has undertaken to introduce this subject at the undergraduate and postgraduate level.

departure from the usual approach of sectoral industrial development the plan emphasises the need to preserve the environment from the harmful effects of industrialisation and to make the local backward and tribal people the focus of developmental efforts.

AIIMS to have a cancer centre

The Institute Rotary Cancer Hospital will soon be built in the campus of the All-India Institute of Medical Sciences exclusively for diagnosis, treatment and research on cancer. The Cancer Foundation and the All-India Institute of Medical Sciences entered into an agreement under which the Foundation would donate Rs 25 lakhs collected by the Rotarians through voluntary effort. A sum of another 25 lakhs would be contributed by the foundation during the next five years. The construction of the first phase of the cancer hospital would be initiated within a month.

The hospital is likely to be fully commissioned by 1979. It is expected to accommodate 300 patients.

At present there are only three major centres in India for the treatment of cancer in Calcutta, Madras and Bombay. No such centre is available in the northern India. The hospital apart from having cobalt and X-ray equipment, would be having space for advanced radio therapy facilities, including a linear accelerator and a cathetron.

UAE gift for Aligarh University

The United Arab Emirates has gifted a sum of Rs. 18 lakhs to Aligarh Muslim University on its founder day as a first instalment for setting up a Petroleum Research Institute. The institute would be named after the ruler of the UAE, The Sheikh Zayed Institute of Petroleum and Technology. The institute, first of its kind in India, will conduct a two-year course in oil prospecting, petro-chemicals, polymer technology and drilling. The university already has (graduate and post-graduate) one in geology, chemis-

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Senior Curator of Birla Institute of Science and Technology and Dr. T.K. Ghosh, Medical Practitioner have also been associated with the committee.

The committee has suggested the following courses: Paper I: History of Science in Antiquity in India, in Islamic World in China and Latin Europe in Middle Ages. Paper II: History of Science—Scientific Revolution of the 16th, 17th, 18th and 19th centuries. Paper III and IV: Elective Subjects: History of Astronomy and Mathematics, History of Medicine and Biology, History of Physical Science, Philosophy and Methods of Science, History of Technology, Social Implications of Science. Project Work and Viva Voce. However, actual elective subjects to be offered each year will be

But initially the M. Phil course would be preferred so that teachers are trained in different disciplines.

The faculty will consist of a professor, two readers and six lecturers.

Studies on medicinal plants

The National Chemical Laboratory has proposed to undertake studies in medicinal plants found in the famous teak forest of Chandrapur district in Maharashtra. Dr. B.D. Tilak, Director of the Laboratory, said in Pune that the scientists and the forest authorities have already collected extensive information on the medicinal plants. The proposed study is part of the NCL's three-year-old Ecosystem Development Plan for Chandrapur in Eastern Maharashtra. Representing a

try and mechanical engineering. It will now add chemical engineering. The institute will thus absorb students who have already qualified in their disciplines since oil technology is closely linked with them. The first instalment of the grant is likely to be spent on purchase of equipment, adding to the already available computer facilities and training of staff abroad. The capital expenditure also includes the setting up of a library and an international hostel.

The Union Ministry of Education has already agreed to meet the recurring expenditure of the institute.

Seminar on role of students

The student representatives of the colleges in Hyderabad have decided to conduct a seminar on the role of student unions in changing perspective. The seminar would help to identify new areas where the student unions could play an affective part in contributing to campus harmony, peace and advancement of academic pursuits.

The Students' Information Centre of Osmania University will be sponsoring the seminar in December. The seminar is expected to bring together the student union officebearers, teachers, administrators and students at large on a common platform and afford them to understand each others problem in right perspective and help identify areas of cooperation. The seminar would also attempt to assign a new role for the student unions to play in advancement of their members' interests as well as those of the society. Mr. H.C. Upadhyay is the Honorary Secretary of the Centre and also the Seminar Coordinator.

U.P. plans for students Union

The Government of Uttar Pradesh will soon give a new direction to formulating the policy for student unions on the basis of a social consensus. Mr. Ram Naresh Yadav, Chief Minister, said in Lucknow recently that this consensus was sought to be evolved through an open debate

on the subject at a State-level conference. Those invited to participate in the conference would represent eminent educationists, vice-chancellors, teachers and students of universities including political parties, social workers and guardians. He said that efforts would be made to work out a unanimously agreed line of action. The pre-emergency status of unions in colleges and universities has already been restored.

Panel to study NCERT document

A 30-member expert committee has been constituted to review the National Council of Educational Research and Training document on higher secondary education and its vocationalisation. The Union Ministry of Education has set up this committee which will also suggest modifications to the NCERT document. The other terms of reference of the committee are: (1) to study the syllabi and courses of the Central Board of Secondary Education and a few State boards with special reference to a few selected vocations and recommend appropriate syllabi; (2) a plan of action for introduction of vocationalisation of secondary and higher secondary education.

G.N.D. constitutes school of Punjabi studies

The Syndicate of Guru Nanak Dev University has suggested to establish a School of Punjabi Studies. The decision will bring under one umbrella the three departments of punjabi language—the Department of Punjabi Language, Literature and Culture, the Department of Guru Nanak Studies, and the Department of Punjabi.

Mr. Bishan Singh Samundri, Vice-Chancellor of the university said soon after the meeting of the Syndicate that one of the heads of the department will act as the Chairman of the School by rotation. There will be a coordination committee to supervise research and teaching. The other members to be associated with this committee would be: Dr. Harbhajan Singh of the Department of Modern Indian Language,

ages, Delhi University; Dr O.P. Mohan, Principal of Doaba College, Jullundur; Prof. Piar Singh, a former Department Head; and Dr. K.S. Gill, Dean of Academic Affairs. Mr. Pritam Singh of the Guru Nanak Studies Department, Dr. K.S. Thind of the Department of Punjabi Language, Literature and Culture and Dr. Dewan Singh of the Department of Punjabi would be its ex-officio members.

The building of the school would be named as Guru Nanak Bhavan. The school would provide inter-disciplinary approach to various research and teaching programmes now being handled by the three departments in isolation. The school will have three professors, seven readers, sixteen lecturers and ten research assistants. Uptil now the Department of Punjabi also had postgraduate classes. It awarded Ph. D. degrees and had M. Phil courses.

Financial cover provided for development schemes of Patna University

The University Grants Commission and the Bihar State Government have sanctioned a sum of Rs. 30 lakhs to Patna University for its various developmental schemes during 1977-78. The development plan of the university includes construction of two hostels, guest house, college canteen, extension of health centre, girls common room, and data processing centre.

Dr. A.K. Dhan, Vice-Chancellor of the university said that the construction of the two new hostels for students would involve an expenditure of Rs. 10 lakhs. While one hostel would be constructed at Rani Ghat, near Hathwa Hostel, the second hostel is under construction at Saidpur.

The extension of the university's central dispensary would cost Rs. 15 lakhs. A sum of Rs 3 lakhs would be provided to the Department of Physics for its extension.

Dr. Dhan said that a separate department for Linguistics and Humanities would be constructed at an estimated cost of Rs 6 lakhs. The university would also set up a data processing centre in Statistics Department. Postgraduate teaching in the Faculty of Engi-

neering would also be organised with the help of the grant given by the UGC.

Shift colleges for Assam

The Assam College Principals' Council held its 15th annual conference in Gauhati recently. A suggestion was made to the Assam Government to establish full-fledged shift colleges wherever found feasible and desirable and to sanction shift allowances to all employees working in shifts in the present set-up till such shift colleges are set up. The conference further resolved that the 10+2+3 pattern be adopted in the interest of vocationalisation of education.

Shri Hiteswar Saikia, Education Minister of Assam, inaugurated the seminar. He stressed the need for planning the educational structure in tune with the needs and realities of life and instilling in the minds of the students a sense of confidence to stand against the storms and turmoils of life.

Inaugurating the opening conference, Shri Dandeswar Gogoi dwelt at length on the trend of education in recent years and called upon the teachers to guide the new generations with dedication and courage of conviction.

The consensus in the seminar was that status quo should be maintained in respect of the +2 classes as being taught in the higher secondary schools and in the pre-university classes of the colleges. It was also suggested that a common syllabi be prepared and introduced jointly by the Secondary Education Board of Assam and the two universities of the State. Government assistance should be made available to meet the higher secondary schools well-equipped in respect of staff library, laboratory and hostel. The seminar suggested a uniform pattern of courses of studies for degree course for both the State universities.

P.G. courses in Telugu

Osmania University will start postgraduate courses in History and Political Sciences in Telugu medium from the next academic session. Prof. G. Ram Reddy, Vice-Chancellor, said in Hyderabad that the academic council had decided to extend the Telugu

medium classes in all other subjects of the faculty of social sciences at the postgraduate level in a phased manner. The council has also approved the starting of correspondence courses and M.D. (Tuberculosis and Chest) from this academic year.

Rajkot seminar on University Finances

At the annual meeting of the Association of Indian Universities to be held in Saurashtra University, Rajkot from January 14-16, 1978 a seminar on University Finances will be held. The seminar will focus discussion on the various aspects of financing of universities specially Public and Private Sources of University Finance, Utilization of Resources, Centre-State Relations regarding University Finances, Experiences of selected universities, and Alternative methods of financing university education.

Many well known economists and educationists are expected to participate. They are: Dr. D.M. Manjundappa, Economic Adviser and Special Secretary to Government Planning Department, Karnataka Government, Bangalore; Dr. Amrik Singh, Vice-Chancellor, Punjabi University, Patiala; Dr. K. Mukerji, Head of the Department of Commerce, University of Calcutta; Prof. S.K. Mukerji, Asstt. Director General (Edn.), ICAR, New Delhi; Dr. K.R. Shah, M.S. University of Baroda; Dr. S. Srikantiah, University of Baroda; Dr. A.R. Kamat, Gokhale Institute of Politics & Economics, Poona; Dr. P.R. Panchamukhi, Department of Economics, University of Bombay; Shri. Ruddar Datt, Principal, School of Correspondence Courses and Continuing Education, University of Delhi; Dr. Balvir Singh, Delhi School of Economics, University of Delhi; Dr. M.C. Purohit, National Institute of Public Finance & Policy, New Delhi; Dr. G.D. Sharma, Association of Indian Universities, New Delhi.

Education workshop in Hyderabad

The regional workshop for South Asia on Innovative Non-formal Education and Social Welfare Strategies was organised

in Hyderabad at the National Institute of Rural Development. The workshop was sponsored by the United Nations, the Social Welfare and Development Centre for Asia and Pacific at Manila, and the National Institute of Public Cooperation and Child Development, New Delhi. The workshop was essentially experienced-based. An analysis of the experiences of selected ongoing innovating programmes in social welfare and non-formal education was carried out and related to the specific needs identified at the level of each country. The innovative methods and materials being developed for non-formal education and social welfare in the countries of South Asia in terms of their relevance to the development of effective strategies for working among the poverty groups were discussed at length. Guidelines for use in training programmes for both the groups of workers were also suggested.

Delhi panel to suggest ways to economise

The Executive Council of Delhi University has formed a committee consisting of Dr. M.S. Randhawa, Dr. Prem Kirpal and Mr. A. R. Kidwai to discuss ways and means by which university expenditure can be controlled and kept within limits. It is learnt that during 1976-77 a sum of Rs 3.78 crores was sanctioned to university as grants and another sum of Rs 1.5 crores would be collected as fees. While the expenditure is expected of the order of 4.83 crores. The expenditure has been going up by 5 per cent every year.

Grants for Calcutta

The University Grants Commission has sanctioned a grant of Rs 19.87 lakhs to Calcutta University for constructing a new complex on Shyamaprasad Mukherjee Road where the Education Department is located. A few departments of the humanities faculty will be housed in the new complex. A special assistance for the Departments of History, Economics, Philosophy and Geography have been received. Ten posts of professor and four of reader have also been created by the U.G.C. in the science and technology faculties.

Conferences, Seminars and Workshops

November-December, 1977

Date	Title	Venue	Sponsoring Body
24 Oct-2 Nov	Manpower planning and development at the Enterprise level	Lucknow	Inst of Applied Manpower Research
31 Oct-4 Nov	Application of Colorimetric methods for rapid chemical analysis and quality control in cement plants	New Delhi	Cement Research Institute of India
1-30 Nov	XXI Hospital Administration Course	New Delhi	Nat Inst of Health Admn & Edn
2-4 Nov	Management of Corporate Insurance	Calcutta	All India Management Association
2-4 Nov	Symposium on Comparative Animal Physiology	Dharwar	Karnatak University
2-6 Nov	11th IASLIC Conference and National Symposium on the planning of National Information Networks	Dharwar	IASLIC & Karnatak University
2-7 Nov	Indus Valley Civilisation: problems and issues	Simla	Indian Inst of Adv Study
4-5 Nov	Seminar on Group technology	Calcutta	National Productivity Council
4-6 Nov	Research Seminar on Respiratory Diseases	Jamnagar	Gujarat Ayurved University
7-12 Nov	Industrial Electronics	Baroda	National Productivity Council
7 Nov-3 Dec	Summer Inst in contemporary trends in Geography	Shillong	N-Eastern Hill University
10-12 Nov	Fourth National Heat and Mass Transfer Conference	Roorkee	Dept of Mechanical & Industrial Engineering, University of Roorkee
10-13 Nov	Ecology and conservation of birds and mammals in India	Bangalore	Indian Institute of Science
12 Nov	Instrumentation and Measurement including industrial electronics	Madras	Institution of Electronics & Telecommunication Engineers
14-17 Nov	Management of Concrete construction	New Delhi	Cement Research Inst of India
14-18 Nov	Determination of Social status in Indian society	Simla	Indian Inst of Adv study
14-19 Nov	International Solar Energy Congress	New Delhi	
16-18 Nov	Police at the Cross-roads	Hyderabad	S.V.P. National Police Academy
21 Nov-3 Dec	Linear programming and operations Research	Dhanbad	Indian School of Mines
21 Nov-10 Dec	Management Information Systems	Poona	Central Inst of Road Transport
22-24 Nov	First All India Symposium on Metabolism and disposition of Xenobiotics	Aurangabad	Marathwada University
22-26 Nov	Management of Growth of tourism in India	Agra	All India Management Association
23-27 Nov	32nd National Conference on tuberculosis and chest diseases	Trivandrum	Tuberculosis Asso of India
25-26 Nov	2nd National Conference on power sources	Bombay	Society for Advancement of Electrochemical Science & Technology
25-29 Nov	Complex flow system: refresher course	Bombay	IIT & Inst of Chemical Engineering
28-29 Nov	Seminar on Maintenance Management and Engineering	Gauhati	National Productivity Council
1-3 Dec	Patents documentation and information services Workshop	Bombay	Documentation Research & Training Centre, I.S.I., Bangalore & Controller General of Patents & Trade Marks, Bombay
1-3 Dec	Symposium of Crystallography and Crystal physics	Hyderabad	Osmania University
5-7 Dec	Finite element techniques in Mining	Dhanbad	Indian School of Mines
5-9 Dec	International Symposium on Monsoon dynamics	New Delhi	I.I.T.
5-15 Dec	41 Session of the International Statistical Institute	New Delhi	Indian Statistical Institute
5-17 Dec	Structural photogeological techniques in mineral exploration	Dhanbad	Indian School of Mines
5-21 Dec	Random Vibration	Bombay	Aeronautics Research and Development Board & I.I.T.
5-27 Dec	Winter School in Chemistry	Bombay	I.I.T.
6-10 Dec	Symposium on structural trends in peninsular India	Tirupati	Sri Venkateswara University
7-9 Dec	Low-cost automation	Bangalore	National Productivity Council
10-12 Dec	Symposium on general topology	Meerut	Dept of Mathematics Meerut University
12-13 Dec	Management information systems	Kanpur	National Productivity Council
12-17 Dec	Open-cast Mining Machinery	Dhanbad	Indian School of Mines
12-17 Dec	Operations research	Madras	National Productivity Council
13-15 Dec	Management of Road Transport	New Delhi	All India Management Association
13-17 Dec	Workers participation in industry	Ahmedabad	National Productivity Council
16-18 Dec	Conference of the Inst of Mathematical Statistics	New Delhi	Inst of Math Statistics & Indian Statistical Institute
16-18 Dec	7th National Conference on Quality Control	New Delhi	Indian Statistical Institute
16-26 Dec	Regional Course in Hospital Administration	Lucknow	National Inst of Health Admn & Education
18-22 Dec	National Symposium on environmental agents and their biological effects	Hyderabad	Dept of Genetics
19-21 Dec	Xth Annual Conference of the Electron Microscope Society of India	Bombay	Osmania University
19-24 Dec	Application of computers in Mining		Bhabha Atomic Research Centre
19-24 Dec	Industrial Electronics	Dhanbad	Indian School of Mines
19-31 Dec	Planning of Mines systems	Bombay	National Productivity Council
		Dhanbad	Indian School of Mines

20-22 Dec	International Conference on Optimisation in Statistics	Bombay	I.I.T. & Ohio State University
22-24 Dec	1st National Symposium on expansive soils	Kanpur	Inst of Engineers (India) & Harcourt Butler Technological Inst, Kanpur
22 Dec to 21 Jan-78	IIInd Course in research methodology for health administrators & educators	New Delhi	National Inst of Health & Family Welfare
26-28 Dec	Seminar on Hindi Poetry after 1960	Hyderabad	Osmania University
26-29 Dec	Annual convention of chemists (including symposium)	Jaipur	Indian Chemical Society
26-30 Dec	Hospital Management	Agra	National Productivity Council
26-30 Dec	Nuclear Physics and Solid State Physics	Pune	Dept of Atomic Energy, Bombay
26-31 Dec	Operation & Maintenance of thermal power stations	Bombay	National Productivity Council
27-29 Dec	All India Symposium on Environmental Biology	Kariavattom	Dept of Zoology, Univ of Kerala
27-30 Dec	Third Indian Chemical Engineering Congress	Chandigarh	Indian Inst of Chemical Engineers
29-31 Dec	Resources engineering and technology—National Seminar	Bombay	I.I.T.
December	Seminar on Philosophy of Language	Kurukshetra	Dept of Sanskrit, Kurukshetra Univ
2nd half of December	Symposium on Physiology of Parasitism	Jabalpur	Univ of Jabalpur

SUBJECT INDEX

Biological Sciences

First All India Symposium on Metabolism and disposition of Xenobiotics

National Symposium on environmental agents and their biological effects

Symposium on Comparative animal physiology

Symposium on physiology of parasitism

Building & Civil Engineering

1st National Symposium on expansive soils

Management of Concrete Construction

Chemistry

Annual convention of chemists (including symposium)

Application of colorimetric methods for rapid chemical analysis and quality control in cement plants

Symposium on crystallography and crystal physics

Winter School in Chemistry

Engineering

Complex flow system: refresher course

Industrial electronics

Industrial electronics

Instrumentation and Measurement including industrial electronics

Low-cost automation

Random vibration

Resources engineering and technology—National Seminar

Seminar on Group technology

Seminar on Maintenance Management and Engineering

7th National Conference on quality control

Third Indian Chemical Engineering Congress

Geography and Geology

International Symposium on Monsoon dynamics

Structural photogeological techniques in mineral exploration

Summer Institute in Contemporary trends in geography

Symposium on structural trends in peninsular India

Environment and Rural Development

All India Symposium on Environmental Biology

Ecology and conservation of birds and mammals in India

History

Indus Valley Civilisation: problems and issues

Insurance

Management of Corporate Insurance

Librarianship

11th IASLIC Conference and National Symposium on the Planning of National Information Networks

Literature & Language

Seminar on Hindi Poetry after 1960

Seminar on philosophy of language

Mathematics & Statistics

Conference of the Institute of Mathematical Statistics

41 Session of the International Statistical Institute

International Conference on Optimisation in Statistics

Symposium on general topology

Medicine & Health

Hospital management

Regional Course in Hospital Administration

Research Seminar on Respiratory Diseases

32nd National Conference on tuberculosis and chest diseases

XXI Hospital Administration Course

22—24 Nov.

18—22 Dec.

2 — 4 Nov.

2nd half of December

22—24 Dec.

14—17 Nov.

26—29 Dec.

31 Oct—4 Nov.

1 — 3 Dec.

5 —27 Dec.

25—29 Nov.

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2 — 6 Nov.

26—28 Dec.

December

16—18 Dec.

5 —15 Dec.

20—22 Dec.

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16—26 Dec.

4 — 6 Nov.

23—27 Nov.

1 —30 Nov.

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A list of select articles culled from Periodicals received in AIU Library during October, 1977

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Jha, Akhileshwar. "Academic intellectuals and the emergency". *New Quest* (3); Sept 77: 5-12.

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Mehrotra, Rajiv. "Power to disrupt". *Surya India* 1(12); Sept 77: 42-3.

Parker, Clyde A, and others. "Student protest in the United States and India". *Indian Educational Review* 12(2); Apr 77: 1-18.

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El-Khawas, Elaine H. "Putting the student consumer issue in perspective". *Educational Record* 52(2); Spring 77: 169-79.

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Armstrong, David G. "Team teaching and academic achievement". *Review of Educational Research* 47(1); Winter 77: 65-86.

Bess, James L. "Motivation to teach". *Journal of Higher Education* 48(3); May-June 77: 253-58.

Morstain, Barry R. and Gaff, Jerry G. "Student views of teaching improvements". *Educational Record* 58(3); Summer 77: 299-308.

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"Group reports". *Journal of Indian Education* 3(1); May 77: 62-71.

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Gillham, B.A. "Reluctant beneficiaries: The teacher and the public examination system". *British Journal of Educational Studies* 25(1); Feb 77: 50-62.

Hambleton, Ronald K. and Cook, Linda L. "Latent trait models and their use in the analysis of educational test data". *Journal of Educational Measurement* 14(2); Summer 77: 75-96.

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Srivastava, H.S. "Some conceptual variations in examination reform". *Indian Educational Review* 12(1); Jan 77: 1-10.

Venkata Rami Reddy, A. "Whither internal assessment?". *Indian Educational Review* 12(1); Jan 77: 11-17.

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Tawney, David A. "New light in old corners: Reflections prompted by observing some computer assisted learning developments". *Studies in Higher Education* 2(1); Mar 77: 69-77.

PROFESSIONAL EDUCATION

Karkal, Shivanand. "What ails medical education". *Youth Times* 6(12); 2-15 Sept 77: 38-9.

UGC REGIONAL Workshop in Commerce. *University News* 15(18); 16 Sept 77: 499-503.

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Dwyer, Richard. "Workers' education, labour education and labour studies: An historical delineation". *Review of Educational Research* 47(1); Winter 77: 179-207.

ECONOMICS OF EDUCATION

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SOCIAL SCIENCES

Psychology

1. Embar, Padma. Psychometric and experimental investigation of social, emotional and learning problems of mentally retarded children. Bangalore University.
2. Pandharipande, Shrikrishna. Study of socio-cultural correlates of achievement motivation. Nagpur University.
3. Prakasam, R. Human factors in industrial productivity. University of Kerala.
4. Raizada, B.S. A study of personality and environmental correlates of n-achievement. Gujarat University.

Sociology

1. Gupta, Dipankar. The Shiva Sena Movement 1966-1974: A sociological analysis. Jawaharlal Nehru University.
2. Jayaram, N. Education and social structure. Bangalore University.
3. Sundaram, D. Citizen, bureaucracy and development administration: A sociological study of development administration at the district level. University of Madras.

Anthropology

1. Sudarsen, Vajjhala. Environment and archaeology of Nellore District. Andhra University.

Political Science

1. Bharathan, M. Jayaprakash Narayan: A study in Sarvodaya philosophy. University of Madras.
2. Kaul, Indra. Indo-Pakistani conflict and Soviet policy, 1947-1966. Jawaharlal Nehru University.
3. Khan, Zahoor Mohammad. Inter-state relations in East Africa, 1961-1971. Jawaharlal Nehru University.
4. Mantri, Murlidhar. Pracheen Hindu rajya mein samprabhuta ka siddhantik evam vyavharik swarup. Vikram University.
5. Raychaudhuri, Bipul Kanti. Government companies in India. University of Calcutta.
6. Saksena, Jai Dayal. Mahabharat ke rajya vyavastha. Kanpur University.

Economics

1. Das, Promod Kishore. Aspects of tenurial conditions and agrarian transformation in selected villages of Orissa. Jawaharlal Nehru University.
2. Pandey, Romesh. Industrialisation of Himachal Pradesh: Problems and prospects. Himachal Pradesh University.
3. Parthasarathi, P.B. The cost structure of sugarcane: An empirical study in regional variations. Osmania University.
4. Ramachandran, H. Transportation and urban attributes in the Coimbatore Region: A case study of an interacting system. Jawaharlal Nehru University.
5. Sharma, Yatendra Nath. Dr. Ram Manohar Lohia ka arth darshan tatha Bharatiya arthvyavastha ke sandarbh mein unka mulyankan. Kanpur University.
6. Sunil Chand. Monetary policy and inflation in India with special reference to money supply. Himachal Pradesh University.

Education

1. Abraham, A.S. Occupational—educational structure of the labour force in India: A study in substitution possibilities. Jawaharlal Nehru University.
2. Ghosh, Reba. A survey of the present system of teacher education in the U.S.A., the U.K. (England and Wales) and India: A study in comparison. University of Calcutta.
3. Soundararaja Rao, T.R. A study of the classroom climate in secondary schools. University of Madras.
4. Tribhuvan Rajdeo Singh. Adoption and discontinuation of innovations in the preparation of secondary school teachers in India. M.S. University of Baroda.

Commerce

1. Agarwal, Mata Prasad. Application of standard costing

and budgetary control technique in Indian textile industry. Kanpur University.

2. Rao, P.V. Public sector banks' loans to priority sector in India since 1969. Kanpur University.
3. Sarma, Anil Kumar. Management problems of the small industrial enterprises in Assam. Gauhati University.
4. Sharma, Narain Das. Institutional finance and Indian agriculture since 1956. Kanpur University.

HUMANITIES

Philosophy

1. Chandrakaw, Phramaha Chinda. The concept of Nibbana in early Buddhism. University of Madras.
2. Harinarayan Singh. The concept of being in the existentialism with special reference to Martin Heidegger. Osmania University.
3. Kothari, M.R. Ego and personality. Saurashtra University.
4. Lakshminarayan, S. The concept of man in J. Krishnamurti and Jean-Paul Sartre: A comparative evaluation. Osmania University.
5. Mukhopadhyay, Tapti. A constructive study of Advaita conception of mind. Utkal University.
6. Paul, Regi. Art as a medium of education in Tagore. Osmania University.

Literature

English

1. Sharma, Lakshmi Shankar. S.T. Coleridge's contribution to English criticism. Vikram University.

German

1. Chosh, Pranabendranath. Johanna Gottfried Herder's image of India. University of Calcutta.

Sanskrit

1. Chawla, Jyotsna. The development of chief rigvedic deities into iconic forms in mahapuranas. Vikram University.
2. Jain, Sushila. Malwa mein Jain sahitya ka nirman aur sahityakaran ka yogdan. Vikram University.

Hindi

1. Brahmachari, K. Kamayani mein vakya samrachna. Sri Venkateswara University.
2. Chulkimath, Shareshchandra Chandrashekharaswami. Mohan Rakesh: Personality and his works. Karnatak University.
3. Dixit, Rajani Krishna Rao. Pandit Ilachandra Joshi aur unka sahitya. Karnatak University.
4. Dubey, Jivant Kumari. Hindi natakon mein rashtriya chetna. University of Saugar.
5. Dubey, Purushottam. Mohan Rakesh: Vyakti aur sahitya. Vikram University.
6. Jalaj, Jai Kumar. Nityashastriya pripekshya mein Sanskrit natakon ka adhyayan aur Hindi prayog ke kshetr mein uske phalitarth. Vikram University.
7. Johri, Veenapani. Chhayavadyugeen gitikavya. Vikram University.
8. Kulshrestha, Chandra Mauli. T.S. Eliot and modern Hindi poetry: A study of four major poets. Gauhati University.
9. Lamani, Heggappa Deshappa. Karnatak ke Lamani lok geeton ka sahityik adhyayan. Karnatak University.
10. Pandey, Sampurnanand. Prem ras: Ras shastriya parampara mein abhinav chintan. Kanpur University.
11. Rawat, Badamsingh Khoobiram. Sathottari Hindi kavita vastu shilp. M.S. University of Baroda.
12. Shah, Ashokkumar Kantilal. Upanyaskar Guru Dutt: Ek anusheelan. M.S. University of Baroda.
13. Shrivastva, Shyam Biharlal. Bundelkhand ke Raso kavya. Jiwaji University.
14. Sinha, Bharti. Swatantryottar Hindi kahani sahitya mein Chitrit samaj, 1947 to 1972. Bihar University.

15. Varma, Mangli Prasad. Premchandottar samajik upanyason mein vyaktik aur samajik visangatiyan. Kanpur University.

Urdu

1. Baig, Mirza Akbar Ali. Mirza Ali Lutf: Life and works. Osmania University.

2. Mohammadi Begum. Ahsan-Uddin Khan: Bayan. Osmania University.

Bengali

1. Bhaumik, Suhrid Kumar. Bengla chhander vivartane samskritaoc-prakrita prabhav. University of Calcutta.

2. Ghosh, Ranu. Mangal kavye samskrita puraner prbhab. University of Calcutta.

3. Gupta, Kantibhushan. Unis sataker seshardhabarti Bangla gadyer rupa-riti. University of Calcutta.

4. Kundu, Pranay Kumar. Meghnadbodh.kabya: Sata-barsher samikshya. University of Calcutta.

Oriya

1. Jena, Bairagi Charan. Oriya kavyare soundarya chetna: From the age of Upendra Bhanja to the age of Radhanath Ray. Utkal University.

2. Sahoo, Premananda. A study on Oriya proverbs. Berhampur University.

Marathi

1. Pathak, Shrikrishna. Avarchin Marathi kaviteel prakshoby 1885-1947. Nagpur University.

Gujarati

1. Tanna, H.A. Poetry of Narsinh Mehta: A critical study. Saurashtra University.

Persian

1. Rafeeq, Fatima. Life and work of Musavi Khan Jurat. Osmania University.

Tamil

1. Guruswami, M.R. Pothilinga. Suggestion in Tamil literature. University of Madras.

2. Ramar, S. A study of the narrative poems of Bharathidasan. University of Madras.

Kannada

1. Hiremath, Siddayya Basayya. Basavannanavara vachana galalli lokanubhava mattu shivanubhava. Karnatak University.

Telugu

1. Lalithakumari, Dwadasi. Adhunikandhra kavitata-tvamu. Andhra University.

Music

1. Dhurga, S.A. Kumari. Opera in South India. University of Madras.

Geography

1. Soni, Poonamchand. Malwa ka jansankhya bhugol. Vikram University.

History

1. Chakraborti, Manika. Malwa in the post-Maurya period: A critical study with special emphasis on numismatic evidences. University of Burdwan.

2. Kolarkar, Sharadchandra Gopalrao. Janoji Bhonsle and his times, 1755-1772. Nagpur University.

3. Oberai, K. Social conditions in North India on the eve of Muslim invasion 700 A.D. to 1200 A.D. Karnatak University.

4. Prem Prakash. Development of education in British India, 1921-1947. University of Delhi.

5. Subbiah, G. Pandya architecture - early phase. University of Calcutta.

6. Swamy, A. Archaeology of the Chingleput District. University of Madras.

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Workers participation in industry

Physics

Nuclear physics and solid state physics

Xth annual conference of the Electron Microscope Society of India

Power Sources

Fourth National Heat and Mass Transfer Conference

International Solar Energy Congress

Operation and maintenance of thermal power stations

2nd National Conference on power sources

Research & Information Management

Linear programming and Operations Research

Management Information Systems

Management Information Systems

Operations Research

Patents documentation and information services. Workshop

Ind course in research methodology for health administrators & educators

Sociology

Determination of Social Status in Indian Society

Tourism

Management of growth of tourism in India

Transport

Management of Road Transport

19-24 Dec.

5 - 7 Dec.

12-17 Dec.

19-31 Dec.

24 Oct-2 Nov.

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26-30 Dec.

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Specialisation: Mediaeval History of India.

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Specialisation: Micro Macro Economics.

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Lecturer in Journalism: Candidate must have good academic record with at least high second class Master's degree in a subject with degree or Diploma in Journalism. Preference will be given to those who have practical experience in a Daily Newspaper in the Editorial and/or production side for not less than 5 years.

Applications in plain paper in quadruplicate giving full bio-data including (1) Name in full (in block letters), (2) Father's name, (3) Date of birth by the Christian era, (4) (a) Permanent

residence and address (in full), 4(b) Present address (in full), (5) Whether the candidate belongs to SC or ST, if so, certificates to be attached, (6) Present occupation if any and name of employer, (7) Present salary drawn (if any), (8) Detailed academic career with mark-sheets and subject studies (including Honours) in Degree and post-graduate courses from Matriculation/Higher Secondary/High School Leaving Certificate Examination onwards and copies/reprints of research contributions, (9) Name and address of two referees not related to the candidate together with an application fee of Rs 10 (ten) (Rs 7.50 in case of S.C./S.T. candidates) by CROSSED INDIAN POSTAL ORDER drawn in favour of the Gauhati University payable at the Gauhati-781014 post office should be sent in an inner sealed cover superscribed application for the post of (Name of post applied for) Advt. No. 7 of 1977 enclosed in an outer cover addressed to Sri K.C. Bhattacharyya, M.A. (Cal), Registrar, Gauhati University, Gauhati-781014 to reach him not later than 25th November, 1977.

The number of this advertisement and name of the post applied for must be referred to in application. Persons in employment should apply through proper channel or with a no objection certificate from the present employer.

The University has accepted the principle of reservation of posts for scheduled caste and scheduled tribe candidate according to the norms of the State Govt. Candidates should submit necessary certificate from the Deputy Commissioner/District Magistrate if they belong to scheduled caste or scheduled tribe.

Candidate will be required to appear at an interview if and when called for.

Canvassing directly or indirectly will be a disqualification.

* * *

GAUHATI UNIVERSITY

GAUHATI-781014

Advertisement No. 8 of 1977

Applications are invited for the following posts:

1. Professor of Business Administration: Two posts (5th Plan)
2. Reader in Business Administration: Three posts (5th Plan)
3. Lecturer in Business Administration: Five posts (5th Plan)

Scales of pay

Professor: Rs. 1500-60-1800-100-2000-125/2-2500/-

Reader: Rs. 1200-50-1300-60-1900/-

Lecturer Rs. 700-40-1100-50-1600/-

All posts carry usual allowances admissible under University rules in force from time to time.

ESSENTIAL QUALIFICATION

Professor: (a) A recognised scholar in the subject with Doctor's degree or equivalent published work, (b) Continuous research work of merit as evidenced by published papers in standard journals or published work of merit,

(c) Experience of 10 years of post-graduate teaching or 15 (fifteen) years Honours teaching or 15 (fifteen) professional experience, (d) experience in guiding and promoting research.

Note: In case of candidate of exceptional abilities with outstanding research contributions the requirement of teaching experience may be suitably relaxed.

Reader: (a) Consistently good academic record with first or high Second Class (B+) Master's degree in a relevant subject or any equivalent degree of a foreign University, (b) A Doctor's degree or published work of an equivalent high standard or other professional qualification, (c) Evidence of continuous research and, (d) Experience of 5 (five) years post-graduate teaching or 8 years Honours teaching or 10 years professional experience.

Lecturer: (a) A Doctor's degree or published work of an equally high standard and (b) Consistently good academic record with first or high second class (B+) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent published work is not available or is not considered suitable, a person possessing a consistently good academic record (due weightage being given to M. Phil or equivalent degree or research quality) may be appointed on the condition that he will have to obtain a Doctor's degree or give evidence of published work of high standard within five years of his appointment, failing which he will not be able to earn future increment until he fulfils these requirements.

Applications in plain paper in quadruplicate giving full bio-data including (1) Name in full (in block letters), (2) Father's name, (3) Date of birth by the Christian era, (4) (a) Permanent residence and address (in full), 4(b) Present address (in full), (5) Whether the candidate belongs to S.C. or S.T. if so certificates to be attached., (6) Present occupation if any and name of employer, (7) Present salary drawn (if any), (8) Detailed academic career with mark-sheets and subject studies (including Honours) in degree and postgraduate courses from Matriculation/Higher Secondary/High School leaving certificate examination onwards and copies/reprints of research contributions, (9) Name and address of two referees not related to the candidate together with an application fee of Rs 10 (Rupees ten) and (Rs 7.50 in the case of scheduled caste/scheduled tribe candidates) by CROSSED INDIAN POSTAL ORDER drawn in favour of Gauhati University payable at the Gauhati-781014 post office should be sent in an inner sealed cover superscribed application for the post of (name of post applied for) Advt.

No. 8 of 1977 enclosed in an outer cover addressed to Sri K.C. Bhattacharyya, M.A. (Cal), Registrar, Gauhati University, Gauhati-781014 to reach him on or before 30th November, 1977.

The number of this advertisement and name of the post applied for must be referred to in application. Persons in employment should apply through proper channel or with a no objection certificate from the present employer.

The University has accepted the principle of reservation of posts for scheduled caste and scheduled tribe candidate according to the norms of the State Govt. Candidates should submit necessary certificate from the Deputy Commissioner/District Magistrate if they belong to scheduled caste/scheduled tribe.

Candidate will be required to appear at an interview if and when called for.

Canvassing directly or indirectly will be a disqualification.

JAWAHARLAL NEHRU UNIVERSITY

Advt. No. Aca. III/9/77

A. School of International Studies

(I) Centre of West Asian & African Studies

1. Associate Professor/Fellow in Political Science or Sociology

Essential Qualifications

(a) Consistently good academic record with at least a high second class Master's degree in Political Science or Sociology or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) About five years' experience of teaching and/or research.

Desirable Qualifications

Considerable research work on regional groupings or problems of economic and social change in Africa. Working knowledge of the Swahili language.

2. Research Assistant

First or high second class Master's degree in History, Political Science, International Relations or Economics.

B. School of Languages

(II) Centre of Spanish Studies

3. Assistant Professor/Associate Fellow in Spanish Studies

Essential Qualifications

(a) Consistently good academic record with at least a high second class Master's degree in Spanish or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; and (c) Some teaching and/or research experience.

Notes

(a) and (b) are for Assistant Professor; and

(a) and (c) are for Associate Fellow.

Desirable

Specialisation in the teaching of Spanish as a foreign language by modern audio-visual methods and/or Modern Spanish and Latin American Literature

and/or History of Culture of Spain and Latin America.

C. School of Social Sciences

(i) Centre for the Study of Regional Development

4. Documentation Officer

Essential Qualifications

(a) Consistently good academic record with at least a high second class Master's degree in Geography or Economics or its equivalent qualification from an Indian/Foreign University; (b) Adequate experience in conducting field surveys and documentation; and (c) Acquaintance with modern computer techniques of data processing and storage.

(ii) Centre for Studies in Science Policy

5. Assistant Professor/Associate Fellow

Essential Qualifications

(a) Consistently good academic record with at least a high second class M.A./M.Sc./M.Tech. in Social Sciences/Natural Sciences/Engineering or Technology; (b) A doctor's degree or published work of an equally high standard; and (c) Some teaching and/or research experience.

Note

(a) and (b) are for Assistant Professor; and

(a) and (c) are for Associate Fellow.

Desirable Qualifications

Three years' research of teaching experience in multidisciplinary areas with published work and proven capacity to organise and teach courses relevant to science policy studies.

(iii) Centre of Social Medicine and Community Health

6. Associate Professor/Fellow in Community Health

(a) Consistently good academic record with at least a high second class degree in Medicine or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree on any aspect of community health or published work of an equally high standard; and (c) About five years' experience in developing interdisciplinary approach to education, training, research and consultation in the field of community health in India.

7. Associate Professor/Fellow in Social Sciences

Essential Qualifications

(a) Consistently good academic record with at least a high second class Master's degree in Sociology, Psychology or Cultural Anthropology; (b) A doctor's degree in any one of the above or related subjects or published work of an equally high standard; and (c) About five years' experience in developing an interdisciplinary approach to education, training, research and consultation in any one of the fields of social sciences mentioned above.

8. Research Investigator (for 2 years in the first instance)

Essential Qualifications

A good Master's degree in Sociology, Psychology or Cultural Anthropology

with experience in collecting social research data.

(iv) Centre for Political Studies

9. Associate Professor/Fellow or Assistant Professor/Associate Fellow in Research Methodology and Political Analysis

Essential Qualifications

(a) Consistently good academic record with at least a high second class Master's degree in Political Science or an equivalent qualification from an Indian/Foreign University; (b) A doctor's degree or published work of an equally high standard; (c) About 5 years' experience of teaching and/or research; (d) Some teaching and/or research experience.

Note

(a) to (c) are for Associate Professor/Fellow;

(a) and (b) are for Assistant Professor; and

(a) and (d) are for Associate Fellow.

Desirable Qualifications

Should have applied prevalent techniques of Political Science Research and Political Analysis.

D. School of Life Sciences

10. Technician Grade III

Essential Qualifications

(a) At least B.Sc. or equivalent degree and (b) Working experience in Biochemical Techniques; Radiochemical or Biophysical Techniques; Tissue Culture.

11. Senior Laboratory Assistant

Essential Qualifications

B.Sc. with two years' experience in Science Laboratories or M.Sc. in Botany/Zoology/Applied Sciences.

E. School of Computer and System Sciences

12. Junior Technical Assistant

Essential Qualifications

A good B.Sc. degree with Physics as one of the subjects or LEE/LME (Diploma in Electrical/Mechanical Engineering) and basic knowledge in electronics. Candidates with experience in electrical soldering and handling electronic circuits preferred.

Age for posts Nos. 8 and 10 to 12 :

Below 35 years

and for post No. 2 :

Below 40 years

Relaxable by 5 years in the case of SC/ST candidates.

Scales of Pay

Associate Professor/Fellow

Rs. 1200-50-1300-60-1900.

Assistant Professor/Associate Fellow

Rs. 700-40-1100-50-1600.

Documentation Officer

Rs. 700-40-1100-50-1300.

Research Assistant

Rs. 550-20-650-25-750.

Research Investigator/Technician Grade III

Rs. 425-15-500-EB-560-20-700.

Senior Laboratory Assistant

Rs. 380-12-500-EB-15-560.

Relaxation in any of the qualification may be made (a) in favour of persons of eminence or of high academic professional distinction, and (b) in exceptional cases where adequately qualified persons are not available but are otherwise found suitable for the respective positions. It will also be open to the university to consider the names of suitable candidates who may not have applied.

The candidates selected for faculty positions will be expected to participate in the teaching and research programmes in the concerned disciplines in other schools of the university as well as in the programmes offered in their own Centres of Studies.

Normally appointment of Fellows and Associate Fellows is made on contract basis for a period of ranging from one to three years.

Benefits of C.P. Fund-cum-Gratuity/G.P. Fund-cum-Pension-cum-Gratuity are available as per university rules.

Persons already in employment should route their application through proper channel. Due consideration will be given to candidates belonging to SC/ST at the level of Assistant Professor/Associate Fellow and below.

Second class (mail) rail fare (both ways) will be paid to candidates invited to appear for interview from outstation by the shortest route subject to the production of rail receipts.

Applications, on the prescribed form, obtainable free of cost from the university by sending a self-addressed and envelope of 23cm x 10cm size to the Assistant Registrar (R & C), Jawaharlal Nehru University, New Mehrauli Road, New Delhi-110057, should reach him latest by November 15, 1977.

Candidates from abroad, applying for faculty positions, may apply on plain paper, (but their applications should reach the university by the last date) furnishing all the relevant information such as their names; date and place of birth; marital status; nationality; state of domicile; postal and permanent addresses; father's name and address; academic and professional attainments; full details of (a) publications, and (b) research projects undertaken; language(s) known; details of visits to foreign countries; and the names and addresses of at least two persons well acquainted with the candidates professional work who should be requested by the candidate to forward to the Assistant Registrar (R & C) confidential report concerning the candidate.

PUNJABI UNIVERSITY PATIALA

Advt No. 154/EST/S.P.S/ U.B/77

Applications are invited for the following posts:

1. Professor in the Department of Speech Drama and Music (Grade: Rs 1500-2500)

Qualifications

- a) A Doctor's degree or published work of equally high standard in

Dramatic literature or theatre art; and

- b) Consistently good academic record with 1st or high 2nd class (b+) Master's degree in English or Punjabi or an equivalent degree of a foreign University. Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of a very high standard, it may relax any of the qualifications prescribed in (b) above.

Experience

- i) 10 years' teaching experience to post-graduate classes & of guiding research.
 - ii) 15 years' practical experience of play-production and playwriting.
- Preference will be given to a playwright and drama producer of repute.

Desirable

Knowledge of (i) different traditions of Indian and Western theatre (ii) Modern theatre techniques; (iii) Punjabi drama and theatre; and (iv) Punjabi language and Literature.

2. Readers (Two) (One each in Business Management and Law) (Grade: Rs 1200-50-1300-60-1900)
3. Associate Directors (Rs 1200-50-1300-60-1900) (One each in English, History and Pol. Sc.)
4. Assistant Directors (Rs 700-40-1100-50-1600) (One each in English, History and Pol. Sc.)
5. Lecturers (Six) (Three in Zoology, Two in Pol. Sc. and one in English). (Grade: Rs 700-40-1100-50-1600)

Qualifications

- a) A Doctor's degree or published work of an equally high standard in the relevant subject; and Commerce in the case of Reader in Business Management.
- b) Consistently good academic record with 1st or high second class (b+) Master's degree in the relevant subject or an equivalent degree of a foreign University.
- c) Qualifications prescribed in (b) above are relaxable in case the research work of the candidate as evident either from his thesis or from his published work is of a very high standard for the posts at Sr. No. 4 & 5. If a candidate possessing a doctor's degree or equivalent published work is not available or is not considered suitable, a person possessing consistently good academic record (due weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed on the condition that he obtains a Doctor's degree or gives evidence of published work of equivalent high standard within five years of his appointment failing which he will not be able to earn future increments until he fulfils these requirements.
- (d) At least 5 years Teaching/Research

Experience for the post of Reader in Law and for the post of Reader in Business Management. Seven years' experience of teaching / research / management work in financial management or allied disciplines.

Additional Qualifications

(i) Reader in Business Management

A candidate who is also either a Chartered Accountant or Cost & Works Accountant from an approved Institution with high percentage of marks in Financial Accounting, Management Accounting & Cost Accounting will be preferred.

(ii) Associate Director & Assistant Director in English Specialization in:

- (i) 20th Century English Literature
- (ii) American Literature
- (iii) Criticism

(iii) Associate Director in History

- (i) Specialization in Modern Indian History with teaching experience in non-Indian History.

(iv) Assistant Director in History

Specialization in medieval Indian History, with teaching experience in non-Indian history.

(v) Associate Director & Assistant Director in Pol. Sc.

Specialization in the field of International Politics/Public Administration.

(vi) Lecturer in Zoology

Specialization in: Cytogenetics/Entomology/Parasitology/Molecular or Cell Biology.

6. Lecturer in Dance (Grade: Rs. 700-40-1100-50-1600)

Qualifications

At least 2nd class Master's degree in Dance from any recognised University or any other recognised Institution in India or any equivalent qualification from a foreign University with 3 years' teaching experience in a University or any recognised Institution.

7. J.B.T. Teacher (Grade: Rs. 150-7-234/8-250/10-300)

Qualifications

- (i) Matriculation with J.B.T.
- (ii) At least 2 years teaching experience in a recognised institution.
- (iii) Must have passed Hindi and Punjabi of at least Matric standard. Candidates with II Division in B.A. and B.Ed. with Higher qualification in English will be given preference.

8. Clerk-cum-Typists (Grade: Rs. 120-5-150/10-250)

(25% posts are reserved for members of Scheduled Castes/Tribes and 5% reserved for Backward Classes).

Candidates should be Matric/Higher Secondary first division or B.A./B.Sc. Those passing Matric/Higher Secondary in 2nd division should have 4 year's clerical experience in a University/College or Government office or public undertaking/autonomous organisation. The condition of experience would be relaxable in the case of persons with a minimum typing speed of 40 w.p.m.

both in English and Punjabi. Knowledge of typing English/Punjabi at a speed of 30 w.p.m. is essential in all cases. The candidates must have passed Punjabi as one of the subjects in Matric or in a higher course.

General for all

Higher start within the grade admissible depending upon the ability and experience of the candidate.

House rent and Dearness allowance, Provident Fund and Medical facilities according to University rules.

Applications complete in all respects on the prescribed form accompanied by a crossed postal order worth Rs. 5/- (Rs. 2/- for candidates belonging to Scheduled Castes/Tribes and Backward classes) drawn in favour of the Registrar, Punjabi University, Patiala, should reach the University by 8.11.77. The forms can be had from the Superintendent (Establishment) by sending a self-addressed envelope of the size of 23 x 10 cms stamped with 25 paise postage.

Persons already in service should apply through proper channel. Government servants who are not in a position to submit their applications through proper channel before the due date should submit an advance copy before the due date and regular applications through proper channel by 11.11.77.

P.K. Kapoor
REGISTRAR

UNIVERSITY OF RAJASTHAN
JAIPUR

Advertisement No. 4/77

With reference to the various posts advertised by the University of Rajasthan, Jaipur in April, 1977 vide advertisement No. 1/1977 for which applications were invited upto 31st May, 1977, it is hereby notified that further applications if any, on the prescribed form, available from the Registrar's office on pre-payment of Rs. 4.00 (Rs. 3.00 extra if required by post) may be submitted for the following posts so as to reach the undersigned by 15th November, 1977.

A. Professors: Chemistry (Inorganic)-1, Mathematics-1, Zoology-1, Economics-1, English-1, Geography-1, Hindi-1, History and Indian Culture-1, Political Science-1, Sanskrit-1, Sociology-1, and Law-2.

B. Readers: Botany-3, Chemistry-5, Geology-1, Zoology-1, Adult Education-1, Drawing and Painting-1, English-3, Economics-3, Geography-1, History and Indian Culture-5, Music-1, Philosophy-2, Political Science-6, Public Administration-2, Sanskrit-2, Sociology-1, Urdu-1, Law-2, Economics Administration and Financial Management-1, Accountancy and Bus. Statistics-3, Business Admn-3, Continuing Education-1, and Human Relations and Management Skills-1.

C. Electron Microscopist : 1.

D. Lecturers: Botany-15, Geology-2,

Mathematics-4, Zoology-7, Economics-7, Geography-6, History and Indian Culture-9, History of Indian Civilization and Culture-1, Home Science-1, French-1, Russian-1, Lib. Sc.-1, Pol. Sc.-9, Public Administration-6, Sanskrit-3, Sociology-6, Urdu-4, Law-13, Accountancy and Bus. Statistics-10, Business Admn-1, Economic Admn. & Fin. Management-2, Hindi-6, English-1, Statistics-2, Continuing Education-1, Human Relations & Management Skills-1, Home Sc. (Nutrition & (Dietetics)-2, Journalism-1, and Indian Languages (Tamil)-1.

E. X-Ray Analyst (Geology)-1, Micro Analyst (Chemistry)-1.

F. Jain Studies: Professor-1, Lecturer-1.

G. South Asia Studies Centre: Professor 1, Reader-1, Lecturers-3.

H. R.A. Podar Institute of Management: Professor-1, Reader-1, Lecturer-1, Case Analyst-1.

Persons who had already applied in response to the aforesaid advertisement need not apply again. They may, however, send on plain paper details of additional qualifications, if any, since acquired and/or additional work done by them. Details of qualifications etc. may be obtained alongwith the prescribed application form or separately as the candidate may desire.

The University reserves the right to increase or decrease the number of posts. It is also open for the University to consider any one of the post of Professor, who may not have applied for it.

L.P. Vaish
REGISTRAR

ALIGARH MUSLIM UNIVERSITY Advertisement No. 24/77-78

Applications, on the prescribed form, are invited for the following posts:

1. Professor of Persian in the Scale of Rs. 1500-60-1800-100-2000-125/2-2500. plus allowances.

Qualifications

(a) A first or High Second class Master's Degree of an Indian University or an equivalent foreign qualification. (b) A research degree of a Doctorate standard or published work of a high standard and (c) at least ten years experience of teaching postgraduate classes and guiding research.

2. Lecturer in Persian (Temporary but likely to become permanent) Scale Rs 700-40-1100-50-1600 plus allowances.

Qualifications

(a) A Doctor's degree or research work of an equally high standard; and (b) Consistently good academic record with 1st or high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary program-

mes, the degrees in (a) and (b) above may be in a relevant subjects.

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for atleast two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23x10 cm. Last date for receipt of applications is 20th November, 1977. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

Jamalur Rahman
REGISTRAR

Personal

1. Dr. P. K. Basu, Professor in the Department of Commerce, Delhi University has been appointed Vice-Chancellor of the North Bengal University.
2. Prof. Raman Poddar of the Department of Nuclear Physics has been appointed Pro-Vice-Chancellor (Academic) of the Calcutta University.
3. Mr. Mohinder Singh Randhawa, Principal, Layalpur Khalsa College, Jullundur has been appointed Registrar of the Guru Nanak Dev University.
4. Prof. Dalip Ghosh has been appointed Registrar of the Rabindra Bharati University, Calcutta.
5. Mr. Anjni Kumar has taken over as Registrar of the Jawaharlal Nehru University, New Delhi with effect from October 27, 1977.

UNIVERSITY OF CALICUT

Ad. AI(3)/4250/77

NOTIFICATION

Applications are invited from qualified candidates for appointment to the undermentioned posts in the University.

Name of Department	Name of Post	No. of post	Scale of pay	Age
Department of Life Sciences	Reader in Biochemistry	1	Rs. 850-1450	Between 30 and 40 years
	Reader in Microbiology	1	-do-	-do-
	Reader in Physiology (Animal)	1	-do-	-do-
	Reader in Physiology	1	-do-	-do-
Department of Journalism	Lecturer	1	Rs. 600-1250	Not above 35 years.

(Age and Qualifications relaxable in suitable cases)

Application forms and other details can be had from the Deputy Registrar (Administration), University of Calicut, Calicut University (P.O.) on payment of Rs. 5/- by way of Indian Postal order drawn in favour of the Finance Officer, University of Calicut and payable at Calicut University (P.O.) till 21-11-1977. The last date for receipt of completed application is 30.11.1977.

REGISTRAR

Dated : 27.10.1977.

BHOPAL UNIVERSITY BHOPAL

Advertisement No. 3/77

Applications on the prescribed form (obtainable free by sending a self addressed envelope of size 24 x 12 cms. bearing stamps of 35 (Paise) are invited for the post of REGISTRAR in the scale of Rs. 1100-50-1300-50-1600 with benefits of allowances as are admissible under the rules of the University.

QUALIFICATIONS ESSENTIAL

- First or Second Class Post-Graduate Degree.
- At least ten years administrative or teaching experience in a responsible position, preferably in a University or in a Post-Graduate College.
- Proficiency in Hindi.
- Upper age limit 55 years as on 1-10-1977.

DESIRABLE

- Familiarity with the working procedures of a University or an equivalent Institution of Higher learning.
- Experience of teaching in a Post-Graduate College or University.

Qualifications and age may be relaxed by the Executive Council on the recommendation of the Selection Committee in cases of Scheduled Castes/ Scheduled Tribes candidates or those who are otherwise found suitable.

Higher starting salary may be considered in the case of an exceptionally qualified and experienced candidate.

Persons already in service must apply through proper channel. They may send an advance copy of their application within the due date and should bring a "No Objection Certificate" from their employer, when called for interview.

The applicant should mention the names of two referees one of whom

should be his present/ immediate past employer.

Candidates shall have to appear for an interview at their own cost and produce their original degrees, certificates etc. at that time.

Applications accompanied with a crossed Indian Postal Order for Rs. 15.00 in favour of the Registrar, Bhopal University, Bhopal should reach the undersigned by name on or before 25-11-1977.

The University reserves the right to negotiate with suitable person or persons, if necessary.

M. G. Paithankar
REGISTRAR

JADAVPUR UNIVERSITY CALCUTTA - 700032

Dated: 27th October, 1977

Employment Notification No. A2/C/3/77
The University invites applications in the prescribed form for the following posts:

- (a) Professor of Food Technology & Biochemical Engineering—1
- (b) Professor of Mechanical Engineering—1
- Registrar—1
- Lecturer of Mathematics—1

Qualifications for all posts at 1 & 3:

- Research Degree of Doctorate standard or published work of equally high standard (relaxable in case of candidates having brilliant academic career and research experience).

For post at 1 (a) : First Class Bachelors Degree in Food Technology/Biochemical Engineering/ Chemical Engineering and Specialization in Cereal/Fermentation/ Protein Technology essential.

- For Post at 1 (b): Specialization in Production Engineering/ Machine Design/Fluid Mechanics or Heat Power. Consistently good academic record with at least

high Second Class Master's Degree in a relevant subject.

For Post at 2 : Adequate academic qualification and sufficient experience of educational administration. The requirement of administrative experience may be relaxed in the case of a teacher candidate.

Experience

For Post at 1 : 10 years teaching/ industrial/research experience including 5 years teaching experience at the postgraduate level; proven ability to guide research.

For Post at 3: 2 years research/ teaching experience up to honours standard.

Scale of Pay

Professor : Rs 1500-60-1800-2000-125/2-2500/-.

Registrar: Rs 1100-50-1300-60-1600/- (under revision to Rs 1500-2500/-).

Lecturer : Rs. 700-40-1100-50-1600/-.

Application forms are obtainable from the University Office during working hours from 14-11-77 onwards on payment of Rs 2/- or by post on payment of Rs 3/-. No travelling allowance is admissible to candidates called for interview. Higher initial salary may be given to really deserving candidates. Those who are in employment should submit their application through proper channel. Choice of the Appointment Board/Committee will not necessarily be confined to applicants only. Canvassing in any form will disqualify a candidate.

Those who applied for the post of Lecturer of Mathematics at serial no. 3 in response to the Advertisement No. A2/C/1/77 dated 17.1.77 need not apply again.

Last date for submitting applications by post is 30th November, 1977.

REGISTRAR (offtg.)

Democratic Experiment in Delhi University

(Continued from page 576)

ing those of science teachers who are devoid of any such opportunity now, abolition of governing bodies and restructuring the nature and content of present unacademic hierarchy.

This process must begin with making the Staff Council the most important decision-making body with jurisdiction over all the activities connected with the college. Any other solution will only be piecemeal, which will only postpone the issues, the most important of which is the introduction of democratic content in our universities.

(Courtesy: The Hindustan Times)

UNIVERSITY ADMINISTRATION

(A Biannual Journal on Problems of Higher Education and Governance of Universities)

The journal focuses attention on administrative and management problems of collegiate and university systems. Widely circulated all-over India and abroad. It has been favourably reviewed and indexed in national and international journals. The only journal in India with exclusive focus on management issues of higher education.

A Special Combined Issue on The Role of Laymen in the Governance and Administration of Universities—Volume IV, No. 1 & 2, 1977.

Select Contents

1. The Role of Laymen in the Governance of Universities : Amrik Singh
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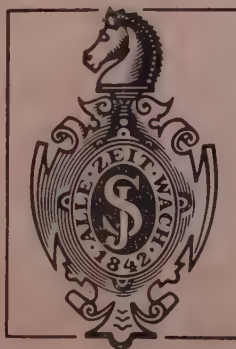
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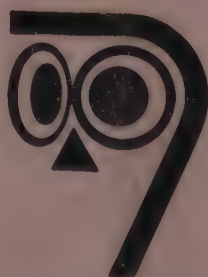


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U.G.C. and Review Committee • Science and Technology



Dr. Pratap Chandra Chunder, Union Minister for Education, Social Welfare and Culture, delivering the convocation address at the Indian Institute of Technology, Bombay.

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UNIVERSITY NEWS

Vol. XV NOVEMBER 16
No. 22 1977

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U.G.C. and the Review Committee

K. L. Joshi

The Review Committee on the UGC was appointed by the Government of India in August 1974 for examining the functioning of the UGC and make recommendations "conducive to more effective discharge of its responsibilities". They submitted the report to the Government by August 1977 and it is understood that the Government is engaged in examining the report.

Debatable Recommendations

In the first place, it may be pointed out that the report has certain political overtones as, for example, the interim recommendation of the Committee for making higher education a concurrent subject. The 42nd Amendment to the Constitution, without much debate effected this which is a debatable point because the Education Commission had said that there was "plenty of scope within the present constitutional arrangement to evolve a workable centre-state partnership in education and that this has not yet been explained to the full". The Education Commission had further said that trial should be given for this constitutional position for at least ten years and then it could be reviewed. The review could be done by Parliament only. It is true that the Radhakrishnan Commission and the Sapru Committee of the Parliament had recommended that higher education should be made a concurrent subject. However, there is a debate about this and the constitution makers had thought of the principle of democratic decentralisation of education making the Central Government responsible only for coordination and standards. There are some merits in this approach, particularly because, the 110 universities, more than 4,000 colleges and more than 40 lakhs of students cannot be managed by the Central Government under the concurrent list and the power has to be decentralised among the states. To say the states and the universities have mismanaged higher education is not administratively a correct proposition because by the same token the Central Government or the UGC could also mismanage the affairs.

Disregard for Autonomy of Universities

There is too much respect for centralisation of higher education in the report and less regard for the autonomous corporations that the universities are and for the academics and students who are largely involved in the process of higher education. This has resulted in making recommendations about the UGC doing too many things like examination reform, raising teachers' qualifications, limiting the number of students, supervising the syllabus in different courses

Former Vice-Chancellor, University of Indore

and generally carrying out these functions through legislative action rather than through persuasion and debate. In reviewing the work of the UGC over the last 20 years the Committee has highlighted the many acts of omission on the part of the UGC mostly suggesting that UGC should have done this or that without understanding why it was not possible for the UGC to take a particular course of action. For example, they have criticised the UGC's attitude towards the various reports of the review committees appointed by the UGC on reform in the curricular studies, in the courses of instruction in different disciplines. The reports were circulated to the universities but no action seems to have been taken by either the UGC or the universities. In the first place, it is difficult for a Board of Studies in the universities to accept a report of a Committee of the UGC without criticism and debate and it may be pointed out that the reports were considered by most of the universities through their Boards of Studies and Academic Councils, who found them inadequate though some universities picked up some good points of such reports. To say that the reports of expert committees of the UGC should be the final authority on the curricular reorganisation is inconsistent with the autonomy of the universities which could argue that they could understand very well the capacity of the students for the courses as well as the standard implied in the revision of any courses of study. To say that whatever the UGC says must be accepted by the universities without criticism, debate or discussion was never in the mind of the UGC during the second period of its development for the report mentions first period to cover the years of 1956-61, second period 1961-73 and the third period 1973-75. During the second period many schemes like those of centres of advanced studies, summer institutes, revision of scales of pay of teachers, larger grants to colleges for libraries, hostels, teachers quarters etc., were introduced for the first time and various review committees were also set up but the chairman and the members of the commission always felt that it was better to carry the universities with them rather than push ideas down their throats creating an opposition from the academics to the UGC. Actually the second period was heralded by the universities as a period of enhancement of academic values, greater respect for teaching and research and greater feeling for the amenities to be provided for the students.

But the Review Committee feels that the UGC should have overpowering influence over the universities which the latter would normally resist as independent corporations. There was also another factor that the universities had to depend on state governments for maintenance grants and state governments very often did not respect the recommendations of the UGC which involved additional expenditure to the states because they said that the UGC had no ideas regarding the financial difficulties of the state governments. Therefore, the UGC was caught between scylla of the universities and charybdis of the state governments.

Throughout the report the Committee point out

that the government should provide substantially larger amounts in the budget of the UGC. During the last 20 years in the discussions with the Planning Commission or with the Ministry of Education and Ministry of Finance every year the UGC had made a claim for more funds for universities and colleges to be provided by the government. This has not been possible because of the priorities of the sectors of economic planning. Actually the progressive trend has been to provide less percentage of the total plan provision for education over the 5 plans. Therefore, this is a cry in the wilderness.

Further, the Committee mentions that the UGC should have more powers that they have to-day to follow up programmes with the universities and the state governments. This also will appear to be an impossible endeavour because by mere legislation the universities cannot be made to sing to the tune of the UGC. Universities are not only autonomous corporations but they have got their statutory bodies like the Court, the Academic Council and the Executive Council which advantage the UGC does not have. Therefore, the universities debate and discuss academic excellence more freely than the UGC. It was because of this reason that in the second period mentioned by the Committee the UGC followed the course of persuasion and discussion rather than legislative action against the universities. Actually the third period from 1973 to date has been a period when the academics have started questioning the schemes of the UGC because they would not like their freedom to be interfered by the UGC. If, of course, financially attractive schemes are proposed by the UGC the universities accept them because they do not lose their freedom to discuss and debate and arrive at programmes which have a consensus of opinion.

Changing the Name

This takes us to another recommendation of the Committee regarding changing the name of the UGC into university education commission. This would be a wrong nomenclature to the present UGC because the major activity of the UGC is and will be providing grants to the universities after examining their needs. The other aspects of academic programmes are matters for the universities to consider or for the AIU (Association of Indian Universities) which should suggest programmes to the UGC. The small academic committees of the UGC cannot influence to 110 universities and nearly 1,50,000 teachers. Determination of standards and coordination can be done by the central organisation of UGC only through making appropriate grants to the universities though they may be unable to do it because of the lack of central funds and state governments do not have adequate finances either.

Coordinating Finance

The problem for the universities today has to be seen in a different perspective in the light of reorganisation, systems analysis and coordination—points

which have been touched upon by the Carnegie Commission reports and in the study 'Higher Education from Autonomy to Systems' edited by J. A. Parkins of the International Council for Educational Development.

Actually it will be seen that both the Sargent and Radhakrishnan Commission reports had thought of providing maintenance and capital grants through UGC to the state universities coordinating the funds of the state governments for the purpose in the UGC. This point was not considered by the Parliament when they passed the UGC Act in 1956. The committee has not taken a note of this point and not thought of the large share of the budget of the UGC—more than 1/3rd of the total funds—provided for central universities which account for nearly Rs. 20 to 25 crores a year and are likely to increase every year. It would have been much better if the maintenance grants to these universities were given by the Ministry of Education and UGC provided only development grants to them so that all the universities in India would have been treated on equal footing by the UGC. Instead of this logical proposition the Committee thinks that there should be a separate cell in the UGC with separate funds for the central universities. This indeed is unhealthy and regressive for higher education in the country, denying equality of opportunities to all universities as national institutions.

Why U.G.C.

A question which the Committee has never answered as to how technical, medical, technological, agricultural and legal education is being developed without a UGC. In the field of technical education they have been able to establish the IITs which have established high international standards. In medical education All India Medical Institutes have been established which again maintain international standards. The same can be said about agricultural universities. If these sectors can develop well without a UGC the argument would in favour of establishing a Ministry of Higher Education coordinating all sectors of higher education *i. e.* engineering, technology, medicine, agriculture, law, etc., by devising an administrative machinery for the purpose, so that the present UGC could merge into the proposed Ministry of Higher Education. This is the point made by international scholars like Parkins, Clark Kerr and others who point out that in federative states the British type of UGC was not likely to succeed. John Wolfenden, former Chairman of the British UGC said "the UGC is what many would call 'a typically British' institution. They mean that on the face of it, it is *illogical, irrational and untidy*. The answer is that while it may deserve all these adjectives, the fact is that it works—like a good many other institutions which are called 'typically British'. The point made by Wolfenden appears to be that British UGC is an inimitable model for federative countries and even a unitary state like Japan has not accepted the model.

Controlling Numbers

The committee have raised the point of numbers which they think should be controlled by the universities and the UGC. This is an impossible task as pointed out by the Parliamentary Committee earlier in 1967-68 and the real position is that when elementary education is made universal and compulsory by state governments upto the age of 14, the bulk of students who would naturally go into institutions of secondary and higher education would be larger every year till we achieve 0 percent population increase. It may be pointed out that the percentages of enrolment figures for the year 1973-74 were 90 for age group 6 to 11, 45 for age group 12 to 14, 25 for age group 15 to 17 and 4.4 for higher education of age group 17 to 22. The last figure indicates that this is not high in relation to national needs and cultural upliftment of society. The device to be used therefore is to establish community/junior colleges for the age group 16-18 affiliated to the universities providing opportunities for general and vocational education and awarding the diploma of AA (Associate of Arts) at the end of the courses. This will satisfy most of the students and those who want to do higher studies further will be smaller in numbers. Besides open university and correspondence courses will provide opportunities of higher education for everyone who would like to have the prestigious higher degree of a university. These junior colleges have to be integrated with polytechnics, junior technical schools and other institutions of that level, industrial training institutes, and junior teachers colleges. In this way the universities will be strengthened and it would not be necessary to have any intervening machinery with legislative powers to control the numbers as well as the universities. All the coordinating and administrative functions would belong to a Ministry of Higher Education at the centre responsible directly to the Parliament.

Man-power calculations cannot be done for those who pursue the humanities and social sciences and commerce courses. The Carnegie Commission have examined this issue and have arrived at this conclusion and so also Lord Eric Ashby, and we have no reason to worry about national standards if the first 10 to 20 percent of the students are good in the pipeline of higher education providing bright students for medical, engineering, technological, agricultural, legal courses as well as those in social sciences, humanities and science. Only a Ministry of Higher Education could establish a co-ordinating body for NEST, CSIR, ACE, ISSR, ICHR, ICAR, ICNR and AICTE. For indeed, coordination and systems analysis have evolved into the systems of higher education as a new phenomenon in all countries and as no single institution can provide the myriad specialities that now comprise higher studies it is necessary that the whole field is covered into a coordinated system of higher education, directly under Central Government. □

On the Reliability of Ratings in Interviews

V. Natarajan*

It is almost universal practice to use 'interviewing technique' for purposes of selection of individuals for jobs, positions, admission to further courses etc. Its form has varied over the years but essentially the technique has retained its place. Some 'established' schools even conduct interviews to admit children to Kindergarten classes. Selection procedures as opposed to methods of achievement measure must be used to pick up or select the right kind of persons for jobs, positions, scholarships and admission to further courses. Here the main objective will be to find methods, forms and modes that will *distinguish* and *differentiate* the person (from others) who will fit into the specifications of job requirement, position requirement or traits required to be successful in the future course of studies. Very often the traditional and more established procedures at all levels have a tendency to eliminate rather than *select* just the same way our tradition examinations try to find what students do not know instead of trying to *assess* what they *know*. The aim of this paper is in part to look at some forms while the major emphasis will be given to present a method of assessing the reliability of 'interview' ratings and suggest ways and means of introducing validity and meaning to our selection procedures with interviewing techniques as one of the components.

Some of the methods where interviewing technique is used for selection of persons for jobs, positions and admission to further courses are discussed below.

I. Interview by a Panel: This is the usual and traditional method. When applied to 'selection' of persons for jobs and positions, applications (giving bio data, qualifications, experiences supported by certificates and testimonials) will be scrutinised carefully by a panel and those who satisfy the assumed criteria will be called for an 'interview' with a panel of selection committee members. A few of them will be from 'outside' and called 'experts' while a few will be those concerned with the organisation, the Head of the organisation and the Head of a Division where the job is positioned. Very often the panel members would be meeting for the first time just a little while before the intended interview; very often they would not have had enough information about

the job and its requirements. Very often again they would not have prepared questions to be posed. There has been so much of adhocism in the whole process of 'interviewing' and fairness of selection 'questionable'. All kinds of 'malpractices' can enter and have entered in the past with the result everyone has lost faith in this system. While this is a form of selection that will certainly live with us for quite some time, it is disheartening to find that attempts at improvement of this (with a view to make it more and more scientific) have been few and far between. Certain suggestions are given here to improve this system.

- (1) The job and its description will be given to every aspirant.
- (2) Application blanks will have to be scientifically prepared soliciting all kinds of *relevant* data and information about the applicant in respect of qualifications and experience and personality characteristics like Hard work, initiative, originality, attitude, etc.
- (3) Data and information collected will have to be processed scientifically with a suitable system of weightages and on the basis of this data processing, applicants will have to be listed in order of merit to be called for interview.
- (4) Wherever possible, those who have been selected may be asked to take a selection test (fixed and free response-types) which is prepared to fit very closely to specifications of the job requirement.
- (5) An interview trying to assess the person's ability to express, argue, ability to think clearly, ability to judge and evaluate, etc., may be conducted. The panel with experts must prepare well in advance certain questions some involving fixed response and others free response for the interview. The author has used with advantage a procedure where questions are written in small pieces of paper and given to interviewees for answering.

II. Interview by a Panel Sitting Individually: Very often for purposes of admission to further courses (professional courses especially), interview technique involving a panel sitting individually and judging the performance is what is adopted. Certain criteria are

*Project Officer (Exams), AIU, New Delhi

usually laid down and weightages allotted for achievement in the previous qualifying examination and the performance in the interview. It is possible in this procedure to take care of various factors and this lends itself quite appropriate for evaluation. At the same time there is plenty of scope for malpractices. Certain suggestions can be given to make this procedure much more meaningful and valid.

- (1) The panel must meet and sort out heads of assessment and procedures of assessment. They must think of more objective forms of checking the traits they are going to measure.
- (2) Proper weightages have to be given and perhaps communication to interviewees before hand.
- (3) Ratings (rank order, mark, etc.) will have to be compared and if possible the reliability of these ratings ascertained. It is absolutely necessary to give weightages to written tests, interviews, etc., based on the reliability of these component measures.

III. Successive Interviews: There are some organisations (usually the private sector) who select their persons on the basis of a series of interviews, the preliminary ones to find out suitable people who can stand upto their more rigorous interviews later. A system of preliminary interviews and a final interview is in practice. Where this is done, very often the tendency has been to eliminate quite a good number at the preliminary stages and keep a handful for the final interview. This happens whenever (in our country) private sector wants to recruit suitable persons for their jobs. Regional interviews (preliminary) will be held and at every centre in the region, a few (two or three usually) will be selected for a final interview as a central place. Usually the final interview will be in the form of a written test together with interview with a panel all sitting together. Recruitment to the services (Army, Navy and Air Force) is also of similar pattern.

IV. Selection Based on Outstanding Performance in the Previous Qualifying Examination: This is also in practice in firms (particularly Engineering Industry, Pharmaceutical, Heavy and Medium Industries) to offer a kind of apprenticeship training or officer training to those who have shown outstanding performance in the previous qualifying examination. Very often the training given to them is so comprehensive and exhaustive that they do not recognise the merit of their performance in the previous qualifying examination beyond the point of selection.

V. Interview After a Written Test: Many organisations (Banking, Insurance, Public Sector Project Undertakings) have their own well established and well prepared written tests administered. These tests very often combine objective type, short answer, essay and problem solving questions together with attitude/interest scales and performance questions. Here again certain suggestions can be given to make

these written tests still better. Some of these are:

- (1) The specifications for these tests (for making questions/items) should be derived from job descriptions and job requirements. A systematic job analysis (combination of questionnaire, interview, on the job work-time studies, etc.) must be done and description and requirements derived on the basis of successful job performers. The author* successfully completed job analysis of technician level jobs in Automobile Engineering for a systems design of a 6 semester technician diploma course. These tests will have to be made by a panel of subject experts, job performers, evaluation experts all sitting together and analysing the specifications.
- (2) In order to improve reliability (selection type tests must have a very high degree of reliability) most of these must be of *objective* type and short answer type.
- (3) Over the years, the performances of those selected on these tests must be correlated with the performances on the job and if necessary, tests revised on the basis of 'feedback'.

VI. Selection Based on On-the-Job Trials: Even though this is seldom used in Indian context, this has a tremendous potential. Teachers, Salesmen, Managers and the like can be selected on the basis of their performance of teaching to a small group; (observed by *raters* with a checklist of criteria for evaluation) on the basis of actual selling and on the basis of managing for a specified period of trial time. The author is aware of an Institution that tried to select a Head of a Department by attaching the interviewees one day each to various departments and evaluating their work (This has a very high validity and to make it reliable, every department will be given a check list of criteria with which to judge.)

VII. Selection to Jobs/Positions by 'Invitation': Sometimes for top positions and specialised jobs, a panel of outstanding persons' names will be made and they will be 'invited' to take up these positions. Usually Vice-Chancellors for Universities, Members of Commissions, Members of Committees will be selected on this basis. The success of these persons in these jobs are purely based on 'chance' factor.

After having reviewed these methods involving 'interview' technique of one form or the other, let us take up the most important question of the degree of reliability (agreement, consistency, acceptability) of such an interview procedure and also its relations with the component of written test performance.

*Natarajan V—'A system approach to the design of Educational and Training Systems in India'—paper to be presented at an International Conference in Cairo on Nov. 25-28, 1977, in Proceedings by Pergamon Press, London, 77.

The ratings by three selection committee members (independent of each other) of 7 candidates who appeared for an interview are given below:

reliability for ratings has been described by Ebel**. If each of k raters has rated N persons on some trait on one occasion, we have the possibility of obtaining

TABLE

S.No.	Person	Rater			S	S ²
		I	II	III		
1	A	5	2	5	12	144
2	B	1	1	2	4	16
3	C	6	4	7	17	289
4	D	3	3	4	10	100
5	E	2	7	1	10	100
6	F	7	5	6	18	324
7	G	4	6	3	13	169
		28	28	28	84	114 ² = $\sum S^2$

Here k = 3, no. of raters
N = 7, no. of those rated

We have here the rank positions of the seven persons as given by three raters.

Applying formula

$$r_{11} = 1 - \frac{k(4N+2)}{(k-1)(N-1)} + \frac{12\sum S^2}{k(k-1)N(N^2-1)}$$

where \bar{p} = average inter-correlation among individual judges

k = No. of judges

N = Number of those rated or stimuli

S = Sum of the ranks for any stimulus or person

The average rank order inter-correlation

$$r_{11} = 1 - \frac{3(28+2)}{(2)(6)} + \frac{12 \times (11,42)}{(3)(2)(7)(48)} = 0.30$$

What will happen if the number of raters is doubled? We can apply Spearman Brown formula

$$r = \frac{2 \times r_{11}}{1 + r_{11}} = \frac{2 \times 0.3}{1 + 0.3} = \frac{0.6}{1.3} = 0.46$$

The average rank order inter-correlation or reliability of rating by 6 raters will be 0.46. While those of 3 raters is seen to be 0.30.

The most recently suggested method of estimating

inter-correlations of ratings of the N persons from all possible pairs of k raters.

This suggests the use of the statistic known as the intra class correlation, which gives essentially an average intercorrelation. Ebel's formula is:

$$r_{11} = \frac{v_p - v_e}{v_p + (k-1)v_e}$$

where r_{11} = reliability of ratings for a single rater

v_p = variance of persons

v_e = variance for error

k = number of raters

It should be noted that this gives the mean reliability for one rater. The reliability of the mean of k ratings for each person would be greater. For this Ebel gives the formula

$$r_{kk} = \frac{v_p - v_e}{v_p}$$

This gives the reliability for mean ratings from k raters. One could arrive at the same result by applying to this reliability for 1 rater, the Spearman Brown formula to predict the reliability for a measure k times as long.

Ratings of seven persons made by 3 raters (for a group of the same accepted traits) prepared for deter-

*Guilford— *Psychometric methods*—page 253

**Ebel R.L.—*Estimation of the reliability of ratings*, *Psychometrika*, 1951, 16, 407-424

mining variances used in estimating reliability of ratings:

This is the reliability for *one* rater. For the three raters combined or for the averages of their ratings

S.No.	Person	Rater			ΣX_p^2	ΣX_p^2
		I	II	III		
1	A	5	8	5	18	324
2	B	9	9	8	26	676
3	C	4	6	3	13	169
4	D	7	7	6	20	400
5	E	8	3	9	20	400
6	F	3	5	4	12	144
7	G	6	4	7	17	289
ΣX_r		42	42	42	126 = ΣX	2402 = $\Sigma (\Sigma X_p)^2$
$\Sigma (X_r)^2$		1764	1764	1764	5292 = $(X_v)^2$	

$$\Sigma X^2 = 840 \frac{(\Sigma X)^2}{kN} = \frac{126^2}{3 \times 7} = 756$$

The sum of squares for persons is

$$\begin{aligned} \Sigma d_p^2 &= \Sigma \frac{(\Sigma X_p)^2}{k} - \frac{(\Sigma X)^2}{kN} \\ &= \frac{2402}{3} - 756 = 44.66 \end{aligned}$$

The sum of squares for raters is

$$\Sigma dv^2 = \Sigma \frac{(\Sigma X_v)^2}{N} - \frac{(\Sigma X)^2}{kN} = 0$$

The total sum of square is

$$\begin{aligned} \Sigma X_t^2 &= \Sigma X^2 - \frac{(\Sigma X)^2}{kN} \\ &= 840 - 756 = 84.00 \end{aligned}$$

And finally, the sum of the squares for remainder or error is

$$\begin{aligned} \Sigma d_0^2 &= \Sigma X_t^2 - \Sigma d_p^2 - \Sigma d_r^2 \\ &= 84 - 44.67 = 39.33 \end{aligned}$$

Computation of variances needed to estimate Reliability of the ratings

Source	Sum of squares	Degrees of freedom	Variance
From persons	44.67	6	7.445
From raters	0	2	
From remainder	39.33	12	3.2775

The sums of squares are given above, their degrees of freedom and the two variances we need V_p & V_e

$$f r_{11} = \frac{7.445 - 3.2775}{7.445 + (3-1) 3.2775} = 0.298$$

$$r_{33} = \frac{7.445 - 2.775}{7.445} = 0.560$$

Spearman Brown formula for 3 raters from 1 rater of 0.298 gives the same result.

It may be seen that the earlier formula is quite easy and less time consuming. The author recommends the use of this formula in preference to Ebel's formula.

Conclusions

The reliability of ratings for one rater is found to be 0.298 or 0.30 (by less tedious formula). The rating of any individual has a consistency or reliability of 0.30 only. This means that for 30% of cases only, there will be agreement for ratings given by the individual. One conclusion is to take any one rater's ratings and give it only 30% credit. If there is a written test component alongwith the interview, the written test can be given 70% credit and the interview 30% credit. The total is worked out from every candidate and the person who has the highest score can be selected. Another procedure is to average the ratings (combine the three persons' ratings) and give it in our case a credit of say 60% and the written test the balance of credit of 40%. The person who finishes at the top can be selected. It is therefore necessary to work out the reliability of ratings of one rater or all the raters put together and take this into account suitably. It is hoped that all agencies like U.P.S.C., Universities, Colleges, Firms, Industries engaged in selecting persons for jobs, positions, admission to further courses, will do similar calculations for reliability of ratings and suitably take this into account thus assuring credibility in their decisions. □

Continuous Assessment and Educational Objectives

Satya Pal Julka*

In one of his articles, entitled 'Examinations Versus Education' in 'The Oxford Magazine', F.W. Bateson made a very interesting observation. "An undergraduate comes to a university to be educated; instead he finds himself being 'prepared' for this or that examination. If he acquires some incidental education—generally from his fellow undergraduate or dons on duty—this is secondary to continuous rehearsal for a series of invigilated three hours papers that are to be the culmination of his career here".

The remarks about Oxford University are meaningful in the context of our system of education and examinations also. The significant point is that testing necessarily puts certain constraints on education and that it is a universal phenomenon. It is, therefore, being realised that reforms in the system of examinations cannot be isolated from the totality of the system of education. In so far as the system of education is useful and meaningful in the socio-economic and cultural context only, the system of examinations should both realise as well as be conducive to the clarification and framing of the goals and objectives of education.

The proposed examination reforms, therefore, relax stress on the end-of-the-course/year examination and emphasize 'continuous' or internal assessment by the teacher who teaches as part of the total assessment. It will be of interest to examine the full potential of the scheme and place in perspective its contribution to the realisation of educational objectives, the improvement in the methodology and techniques of teaching, and the measurement of learning outcomes. All these elements are in a certain way indissolubly linked.

The concept "is not meant to enforce discipline", according to the reports of U.G.C. Zonal workshops. The goals are to make the process of evaluation and assessment continuous, to integrate teaching and testing, to test the skills that a written examination cannot possibly test and to ascertain how the students are working. However, its impact can be deeper and far reaching if properly implemented coupled with a sense of sincerity on the part of the academic community. Continuous assessment should emerge as an autonomous model. The full force of the scheme

can be felt only if it promotes the building up of the total personality of a student, inculcates a spirit of well founded confidence and fights his shyness in speaking and presenting his views before others, while taking care of his academics simultaneously. It is in search of some of these ideals that some parents have been spending money of sending their children to public schools and more often to pseudo public schools with the end results not always satisfying. The implementation of the scheme at various universities, however, leaves much to be desired. Most of the universities have implemented it as mini-examinations of tests conducted periodically. They have not made it a part and parcel of the final assessment at the university end-of-the-course/year examination. This may be due partly to the absence of foolproof norms for purposes of assessment, partly to the absence of conditions, facilities and atmosphere conducive to the satisfactory functioning of an educational institute, and partly to the undercurrent of lack of faith and trust not only in the abilities of the teachers but also in their sense of honesty and integrity.

It is, therefore, necessary that the teachers display the highest degree of professional ethics when evaluation of students is left exclusively to their care. Experimentation and learning should be a never-ending process for them. The authorities should provide maximum facilities to the teachers to engage in research and improve the quality of teaching.

Experience has revealed that a large number of students at our universities are not there in quest of knowledge or learning. There is an opinion that with the introduction of 10+2+3 pattern of education the flow of number to the universities will be arrested and only students with aptitude and desire for learning will go up. With the existing student-teacher ratio and over-populated classes the model of continuous assessment has to apply more at the group level than at the individual level. Application at the group level obviously implies that assessment will have to be non-evaluative, with the other objectives remaining the same. This may be an extension of the semantic range of 'assessment' but it is meaningful and useful in the context of the present situation. It also highlights the flexibility and dynamism of the proposed model. Its operational potential is pertinent now and will be conducive to the improvement of

the quality of instruction both at levels where the numbers are large and where the numbers are more manageable. At the former level it can work with a reasonable group as the smallest unit and at the latter level it can work with an individual as the smallest unit. At a certain point of time when, with the introduction of 10+2+3 pattern of education, there will be no freshmen at colleges and numbers will be considerably reduced, the model can be made to work with the individual as the smallest unit. It will yield better quality of instruction and can be effectively deployed for purposes of 'evaluative assessment'.

The scheme should be split up into four parts:

- i) testing integrated into teaching, constantly modifying and refining teaching, and being in turn modified and refined by teaching;
- ii) periodic oral tests;
- iii) regular home assignments, with references to the available source materials;
- iv) periodic (two or three a year) written tests of one hour duration each to serve both for purposes of evaluation as well as for preparation and practice for end-of-the-course/year written examination.

The first part is constant, with the others serving as variables to be used according to the demands of the situation. The first part, however, has a bearing on all others. It involves matters of teaching techniques and methodology which have not yet received their due consideration or have not met with acceptability at the level of higher education. It requires selection or preparation of teaching materials, their presentation in the classroom, and a technique of questioning which has now become a discipline in its own right.

The model envisages the following steps to be gone through in each hour of instruction.

1. Judicious selection or preparation of material that can be appropriately covered in the specified time. This is, of course, pre-classroom activity.
2. First half of the available time to be spent on the presentation of the material according to the level of students. The higher the level, the greater the appropriateness of using the lecture mode so that at the highest level the entire hour may be devoted to lecturing, if the need be, to be immediately followed by another hour for the other steps. Obviously at lower levels the lecture mode could be completely discarded and active student participation ensured in the process of learning.
3. It should be immediately followed by some oral questions to test and revise. At the higher levels the students could be engaged in a discussion amongst themselves, with the teacher's questions providing the prompting service.
4. This should be followed by a short written exercise, preferably comprising objective type items

(True/False type, multiple choice/multiple facet type, matching type etc.).

5. A few minutes could finally be spared for the students to engage in combining certain items/ideas or creating new ones, in which even previous lessons might also have a part to play.

6. Long answer/short answer questions could be set aside for home assignment.

Some of the advantages of adopting this model of continuous assessment can be summed up as follow:

1. Inculcation of more comprehensive skills that are required only for the end-of-the-course/year written examination, thereby building up the total personality of a student.
2. Some direct or indirect knowledge of students for the teacher either on the individual level or the group level as the situation may be, leading to the modification, refinement and change of techniques if necessary.
3. A certain self-evaluation for the teacher.
4. Student participation in the process of learning, a concept usually lauded theoretically but seldom practised.
5. Greater interest by a shift in activity from oral to written imitation to creativity and vice-versa.
6. Ensuring better concentration by keeping the students alert and active throughout.
7. Consolidation of learning by testing, revision and variation of activity, thereby helping retention.

This approach to teaching implies more work and preparation for the teacher. The courses of study should be reorganised and re-structured, keeping this fact in view. In the interest of quality of instruction, the actual work-load of the teacher and the student-teacher ratio should be rationalised. 10+2+3 pattern of education should pave the way for this if its true objectives are to be realized.

Working with this model also implies much harder effort on the part of the teacher in the classroom than simple lecturing. But the model proposed has the in-built infra-structure to provide relief to the teacher. When the students are busy writing during the teaching hour, the teacher can snatch a moment to relax. This will also bring him back to teaching with greater vigour.

This treatment of the constant part of continuous assessment, either evaluative or non-evaluative as the case may be, has been undertaken at length because it constitutes the core of the model. Periodic oral tests, home assignments, and periodic written tests can be treated as purely evaluative variables, to be used according to the needs of the situation. However, if all three can constitute a part of assessment, the reliability and validity of assessment will go up. Moreover, they can also be a means to better preparation for the end-of-the-course/year written examination, though that should not be their only purpose. □

Science and Technology : Achievements and Weaknesses

When we became independent in 1947, the basic institutional infrastructure required for the proper development of science and technology was limited and our indigenous capability to promote it was far too inadequate to meet the challenges of national development. It was therefore but proper that Pandit Jawaharlal Nehru gave his full support to two major programmes, viz., (1) the building up of the essential institutional infrastructure; and (2) the creation of high-level trained man-power, so that we can develop an indigenous capability oriented to solving our problems and related to our needs. The success achieved in both these directions has been highly commendable. During

excellence in teaching and research in medicine and expanded and improved facilities for medical education.

Side by side, we have also tried to create a high-level trained technical man-power and today we have a scientific community which is regarded as the third largest in the world.

These achievements in a short span of about three decades are something to be proud of. India can no longer be regarded as technologically or industrially a backward country: we have been able to build up a large sector of modern industry and to cut down very largely on the industrial products we used to import. In fact, we even export several sophisticated industrial products.

that they do not have adequate opportunities here. Moreover, a large number of them are unemployed or mis-employed on jobs which cannot provide any outlet for their talents and skills in science and technology. It is all the more to be regretted because this happens in the face of millions of tasks that are crying to be attended to.

(2) Science and technology is now fairly well-harnessed to the service of the rich and well-to-do classes. But it has not made much impact so far on the lot of the poor people in our country, whether urban or rural. It has, in fact, widened rather than reduced, the gap between the life-styles of the rich and well-to-do people on the one hand and the poor masses on the other. This is a serious weakness because the most urgent problem of national development, in my opinion, is to eradicate poverty and to assure a minimum standard of living to all our people.

(3) Science and technology have transformed the life in urban areas. But the benefits of this transformation do not reach the poor people who dwell in slums and who have to suffer most from pollution and insanitary conditions. In rural areas, agriculture has been transformed through irrigation, improved seeds and fertilizers. But in other respects, very little impact has been produced.

There is no doubt that education, science and technology hold a key to the solution of our pressing problem of hunger, ill-health and illiteracy; and yet we find a large gap between its promise and actual performance. Why is this so? In my opinion, the answer lies both within science and technology and outside them. We must ascertain the causes of this failure and mount a simultaneous attack on both the fronts.

Reform within the system

It is necessary to understand that, like education, science and technology are double-edged tools. They have important social, economic, political and

CONVOCATION

the last thirty years, we have: developed a major programme of atomic research; expanded considerably the activities of the CSIR and its national laboratories; developed centres of excellence like the Indian Institute of Science, Bangalore and the Tata Institute of Fundamental Research, Bombay; expanded and improved the teaching of science in the universities; established five Institutes of Technology and fifteen regional Engineering Colleges and expanded and improved other Engineering Colleges; established agricultural universities and expanded and improved agricultural colleges; and established centres of

Our agricultural scientists have made a major contribution to increasing food production, and our medical personnel provide an advanced and sophisticated health service. We now have an excellent institutional base in teaching and research in science and technology, a large and competent scientific community, and an indigenous capability which is unique among the developing countries.

There is, however, another side to this story and it would not be wise to ignore some of the major weaknesses of the present situation. In particular, I would like to invite attention to three aspects of the problem.

(1) We are not making full use of the high-level technical man-power we have. A large number of technically trained persons go abroad on the ground

Excerpts from the convocation address of Dr. P. C. Chunder, Union Education Minister, delivered at IIT, Bombay recently.

cultural aspects. Under certain circumstances, they help to strengthen and perpetuate the *status quo* while, given another set of conditions, they assist in social transformation. I think we have not given adequate attention to this aspect of the problem.

Let us examine the various linkages of our science and technology.

(1) One linkage, and a strong linkage at that, is with western science and technology from which we have been borrowing a good deal and on which we are still greatly dependent. This technology was designed for different societies with their own cultural, social and economic conditions. A transplant of this technology in our conditions, which are vastly different, can only create problems, no matter what care we exercise in the 'choice' of a technology. For instance, western technologies are, by and large, capital-intensive and labour-saving and need large energy resources. On the other hand, we need labour-intensive and capital-saving technologies that will need low energy inputs. It is not therefore a question of borrowing or choice of technology: it is basically an issue of developing or generating appropriate technologies of our own, suited to our needs, resource endowment, and aspirations. I am afraid that we have failed and are still failing in this area. There is no adequate effort to generate appropriate technologies of our own, and even where they have been generated, there is often a tendency to play 'safe' and borrow a technology tried abroad rather than to run a 'risk' with a new technology created within the country.

(2) The second linkage of our science and technology, like that of higher education, is with elite social groups, both within the country and abroad. Our intellectuals desire to copy the life-style of the West. They generally look up to the western countries for their models and appreciation. They very often desire to be a part of the world academic community, to write in foreign journals, to publish

books abroad, to be invited to conferences in other countries, and so on. As the Education Commission said, the centre of gravity of Indian intellectual life is outside India. Even within the country, the intellectuals generally live in an elite world of their own and are separated from the masses of the people in many ways. The students of the high quality institutional infrastructure we have created for science and technology come mostly from the rich and well-to-do classes and go back into them. The products which we make with the help of science and technology are also mostly the non-essential, luxury goods meant for the rich and well-to-do and *not* the goods needed by the common man or the poor people in their day-to-day lives. In short, higher education, science and technology in India are mostly meant for the upper and middle classes. Unless this nexus is broken, we will neither be able to eliminate poverty nor to create an egalitarian society.

It is probably because of these two firm linkages that our science and technology has so far neglected the rural areas and the poor people. I do not want to suggest that these linkages should be destroyed. They are needed, within reasonable limits. But I am quite clear in my mind that our science and technology will have to be closely linked to the development of our rural areas and the urban slums and to the improvement of the standards of living of our poor people. These are the supreme tasks before the country, and if these are to be properly tackled, several reforms will have to be made within the system.

(1) My first proposal from this point of view is that the functions of all institutions of higher education and of science and technology should be widened. At present, they include only research and teaching, except in the agricultural universities, where extension is regarded as an equally important third function. I am of the view that every institution of higher education must accept all these three

functions—teaching, research and extension must give them equal importance. It is the activities of extension that will enable these institutions to understand the problems of the community around and to help to solve them.

(2) My second proposal is that these programmes of extension should, as far as possible, be focussed on urban slums and rural areas. Their problems are not going to be solved unless the entire educational system, and especially the crucial sector of higher education, science and technology, is concentrated on them and on improving the standards of living of the poor people.

(3) My third proposal is that the studies and curricula in these institutions should be suitably changed to include compulsory field-work in the community. This will make the studies better and richer and help to promote the values and attitudes of service to the people.

(4) My fourth proposal is that the talented students from the poor and weaker sections of the community have to be given an increasing sphere in this field which, so far, has mainly remained an almost exclusive monopoly of the rich and the well-to-do. I am very happy that student of the scheduled castes and tribes are now given some reserved access to the Institutes of Technology. The effort obviously needs to be generalized and expanded.

(5) My fifth proposal is that we should give high priority to research on problems that affect the common man or the poor people. For instance, their principal transport is still the bullock cart and the bicycle which need more attention than the automobile or air-plane. Similarly, much greater and more concentrated attention should be given to problems of housing for the poor people (at low cost and with the use of local materials), disposal of night soil in villages, water supply and prevention of communicable diseases, the generation of appropriate technologies for village or

small-scale industries, energy needs of the poorest thirty per cent of the people, and so on. This may not be 'prestigious' research which can attract attention abroad. But it is certainly the most useful research I can think of for nation-building.

(6) My sixth proposal is to ensure that science and technology do not disturb the ecological balance of nature and do not create pollution. The very existence of man will be endangered if we do not take these precautions.

Reform outside the system

These reforms within the system will also have to be matched by simultaneous reforms outside the system. Among these, I would like to emphasize two. The first is a big drive to eliminate urban slums and to develop rural areas which, in the words of Tagore, hold the cradle of the race. The second is to utilize all available trained man-power to the fullest extent possible. In fact, both these proposals are independent. For instance, it is one thing to say that we have 50,000 unemployed engineers. But even if all of them are unemployed, we will be able to provide only one engineer for ten villages. In fact, if we take up the programme of clearing urban slums and of rural development in a big way, our so-called 'surplus' of trained scientific and technical man-power would overnight be converted into a 'deficit'. Secondly, we must give the highest priority to programmes meant to serve the poor people and to improve their standards of living such as guaranteed employment, public distribution of essential commodities, provision of adequate health services, eradication of illiteracy and universal elementary education.

A Gandhian Science & Technology

What I have been trying to say can be best summarized in one sentence : we need a Gandhian Science and Technology. Let me state categorically that Mahatma Gandhi was not

opposed to science and technology though many labour under that wrong impression. He was a great ecologist and humanist and what he said was that he did not want a science and technology that was above the moral order, made a slave of man, and increased poverty and unemployment (which is what science and technology often do). Instead, he pleaded for a science and technology that would serve the villages and the poor and conserve rather than exploit nature. It is this Gandhian Science and Technology which we have to develop and it is for this that I expect you to take the initiative and leading interest.

To the Alumni

To the young men and women who have taken their degrees and distinctions today, I give warm felicitations. I wish them a long and happy life of service to the country. Please remember that poor as she is, India has given you a high quality and extremely costly education. This has been mostly paid for by the poor masses. It cannot be regarded as anybody's right. It is, in fact, a debt which you owe to the society, a moral and legal debt, enforceable in a court of law. But in our tradition, it is the moral debts that are considered to be of the highest importance—*Pitri-rina*, *Matri-rina*, *Acharya-rina* and *Samaj-rina*. I would appeal to you to strive your best to pay this *Samaj-rina* or social debt through service to the motherland, and especially to the rural areas and the poor people, both urban and rural. □

Dr. Patil honoured

The agriculture university at Rahuri in Ahmednagar district at its 7th annual convocation held in Kolhapur recently conferred honorary D.Sc. degree on Dr. Pandurang Chimaji Patil, the centenarian agricultural expert and first Indian principal of Pune agriculture college. Mr. H.G. Vartak, State's Agriculture Minister and Pro-Chancellor of the university presided over the function.

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J.C. Sen
ASST. REGISTRAR

Mysore Stalemate

(From our special correspondent)

The Chancellor of Mysore University, Mr Govind Narain (who is also the Governor of Karnataka), has ordered an enquiry into the affairs of the University. He has appointed Mr. Justice B. Venkataswamy, a retired judge of the Karnataka High Court, to make the inquiry and submit his report in two months.

This is the first time that an inquiry is being held into the working of the 61-year-old University, the first to be established in a princely State before independence and the oldest of three such institutions in Karnataka.

For more than a month the campus of Mysore University has been disturbed by student agitation in which some members of the teaching staff have also joined. The students began their agitation with two demands, resig-

memorandum on police "excesses" on students. Mr. Urs reportedly refused to receive the memorandum which wanted the Vice-Chancellor to "condemn the police excesses." Later the same day the Vice-Chancellor was gheraoed in his office for nearly ten hours by the agitated students.

The students wanted an apology from Mr. Urs for his alleged uncomplimentary remarks to the delegation, his resignation from Vice-Chancellorship for alleged extravagant expenditure and cancellation of appointment of Dr. Shrimali as visiting professor. In support of their demands the students began a relay hunger-strike on the campus.

While these things were going on, two teachers attempted to bring about a settlement. As a result of their efforts Mr. Urs had

ing their right to continue the indefinite relay hunger-strike, the University Syndicate met and decided to close the colleges indefinitely along with the postgraduate and undergraduate hostels.

A new dimension to the agitation was added when a group of teachers decided to offer "dharna" on the campus in support of the students' demands. They wanted a judicial inquiry into the affairs of the University and a report submitted within a month. They also wanted the Vice-Chancellor to go on leave for the period.

Since the agitation had taken a new turn, the Deputy Commissioner and parents gave up their efforts to bring about a meaningful dialogue.

Fortytwo teachers, including four university professors and nine readers, offered "dharna" by squatting on the lawns of Crawford Hall, the administrative headquarters of the University. They demanded the reopening of colleges, judicial inquiry into the affairs of the University and cancellation of the appointment of Dr. Shrimali as visiting professor.

The teachers' unusual "dharna" resulted in a counter-"dharna" by another group of about 80 teachers, including some senior professors, to persuade the other group to give up their "dharna."

As the "dharna" and counter-"dharna" by teacher groups continued, the Chief Minister of Karnataka, Mr. Devaraj Urs, made an appeal to Mr C. D. Narasimhaiah, University Professor of English, who was leading the "dharna" to withdraw the agitation immediately. In doing so he made it clear that this was not the way to seek redressal of grievances. Visibly annoyed by University professors agitating with students, he said, "The Government cannot keep quiet and the law and order will have to be upheld."

The teachers ended their "dharna" and a delegation called on the Chancellor with a memorandum which, among other things, demanded a judicial inquiry into the working of the University and cancellation of the appointment of Dr. Shrimali

CAMPUS NEWS

nations of the Vice-Chancellor, Mr. D. V. Urs and Dr. K. L. Shrimali, a visiting professor and added a third, a judicial inquiry into the working of the University, later:

It all began on a fine October morning when Dr. Shrimali was to deliver a lecture at the Central Institute of Indian Languages on the campus at Mysore with Mr. Urs presiding. The students reportedly shouted down Dr. Shrimali, denouncing his "close association with the then Central leaders during the Emergency." The police intervened and made a lathi-charge. Two days later a group of postgraduate students went in a delegation to the Vice-Chancellor's residence to present a

reportedly agreed to tender an apology in the spirit of "forget and forgive", but the students insisted on having this in writing.

The students launched a strike in support of their demands and the University authorities thought it prudent to close the colleges in Mysore city for a short while. As the students' strike entered the fifth day, the Deputy Commissioner of Mysore and anxious parents tried to initiate a dialogue with the University authorities and students for an early reopening of colleges and restoring normalcy.

When things looked promising with the striking students urging the University authorities to reopen the colleges and deciding to return to their classes with reserv-

as a visiting professor. Delegation on behalf of another group of teachers and students met the Chancellor with their memorandum. The Chancellor told the delegations that he was aware of the currents and cross-currents in the University and had decided to get certain points made in the memorandum regarding the working of the University and its administration looked into.

The University Syndicate met again and after reviewing the situation arising out of the agitation decided that colleges in Mysore should be reopened. Accordingly, the colleges were reopened on October 29 after being closed for three weeks. The attendance was not encouraging, half the number of students keeping away from classes. A group of students offered "dharna" before the Vice-Chancellor's residence. On the second day of the 'dharna' 25 students were taken into custody by the police on charge of trespass into the Vice-Chancellor's residence. They were remanded in judicial custody since they refused to avail of bail.

The students' arrest resulted in a massive protest before the University office. Police used lathis and burst tear-gas shells to disperse about 5,000 students who had gathered to protest against the arrest of their colleagues. The police claimed that they were forced to resort to lathi-charge and tear-gas because of persistent stone-throwing by students on policemen on duty and police vehicles. The students, however, asserted that policemen threw stones on themselves and alleged that the police raided the Maharaja's College hostel and beat them up "mercilessly."

In view of this incident colleges in Mysore city were closed for the second time, again indefinitely.

A few days after the Chancellor had announced an inquiry into the working of the University, the Syndicate met for the third time in a month and took the unprecedented decision to request Dr. Shrimali to relinquish his post as visiting professor. Dr. Shrimali was quick to react to the Syndicate's decision by send-

ing in his resignation. In doing so he took the unusual step of returning the honorary degree of D. Litt. conferred on him by Mysore University at its convocation in 1969 to acknowledge his services to the University during his tenure as its Vice-Chancellor.

That Dr. Shrimali, former Union Education Minister and former Vice-Chancellor of Banaras Hindu University (he went to Banaras in 1969 after his tenure in Mysore) was hurt by the Syndicate's decision was clear from his letter to the Vice-Chancellor, which he released to the press. He said he was astonished that without any reason he was being asked to relinquish the post of visiting professor created in the name of Krishnaraja Wadiyar, Maharaja of Mysore who founded the University.

Dr Shrimali said in his letter : "I am aware that there is pressure on the University from some political groups and it would have been a more straightforward step for the University to request me to relinquish my professorship on this account. By breaking this contract (which was for one full year), the University is violating all academic values and ethical norms. I am afraid the University authorities are setting up a dangerous and unhealthy precedent for the whole academic world.

When my appointment was announced in December, 1976, I was given to understand that it was greatly welcomed by the academic community and nobody raised any objection between December and March. It was only after the Lok Sabha elections that the controversy was started about my appointment.

I learnt about this controversy only in April on my return from Tokyo. I had then offered to relinquish my post but the University administration did not accept my suggestion. Since then I have repeated this offer several times but every time I was persuaded to stay on with the assurance that the University authorities would honour the agreement. I do not understand what has motivated the University to suddenly change its decision.

After stating that his lectures arranged by the University on two occasions (April 19 and October 8) were disturbed by a group of slogan-shouting students, Dr. Shrimali dealt with the allegations against him made in a memorandum submitted to him by the Secretary of the Akhila Bharatiya Vidyarthi Parishad in the presence of the Vice-Chancellor. Referring to the charge that he was against Mr. Jayaprakash Narayan, Dr. Shrimali said "If you read 'JP's' diary you will find that, between the lines, he has indirectly paid a compliment to me wherein he describes the circumstances under which my resignation from the Union Cabinet as Education Minister was accepted under the Kamaraj Plan. It is true that 'JP' and I have had some differences, but I trust this is permissible in a democratic society.

As for the allegation that Mr. Narayan was prevented from entering the Banaras Hindu University campus while he was Vice-Chancellor, Dr Shrimali said : "He used to visit the campus quite frequently as our guest and the University, under my Vice-Chancellorship, had the honour to confer the honorary doctorate degree on him. On only once occasion I requested him to postpone his visit since the University was closed after a midnight raid on my house by the students. Even then the University had made all arrangements for his reception."

Squint workshop organised at Aligarh

A Workshop on Squint was organised by Aligarh Muslim University Institute of Ophthalmology to highlight the year-long programme of the silver jubilee celebrations of the institute. Ophthalmologists from Assam, Madhya Pradesh, Gujarat, Tamil Nadu and U.P. participated in the workshop. Dr. A.M. Khusro, Vice-Chancellor, while inaugurating the seminar emphasised the importance of such workshops, specially in view of the alarming rate of increase in the diseases of the

eye. He expressed the hope that the Institute would soon be converted into a Regional Institute of Ophthalmology. It would then be in a position to play a more significant role in the service of humanity.

Prof. B.R. Shukla, Director of the Institute, pleaded for organising seminars and workshops on squint which had remained neglected so far. In a forceful appeal he urged the participants to carry the fruit of knowledge to the remotest corner of the country in order to arrest blindness at the early stage.

Dr. J.M. Pahwa, Chief Medical Officer of the Gandhi Eye Hospital, speaking on this occasion said that due to the importance of Orthoptics the subject had been recognised as a sub-speciality.

Earlier, Prof. Hamida Saiduzafar, Head of the Department of Ophthalmology threw light on the progress achieved by the Institute during the past twenty five years.

Dr. B.S. Goel, under whose active supervision the workshop was organised, gave an account of the work done during the course.

Unani books donated to Kashmir Varsity

Dr. Ali Mohammad Mattoo, Dy. Superintendent, Government Women Hospital, Srinagar presented about seven hundred books on Unani and Ayurvedic medicine to the Vice-Chancellor of Kashmir University, Shri R.H. Chishti. The gift includes studies on unani medical science by Avicenna, the greatest medical scientist of his times and a dozen rare manuscripts. The books would be of great use to researchers of medicine. Shri Chishti thanked Dr. A.M. Mattoo for his valuable donation to the university and hoped that this gift would be followed by more donations from other persons.

Computer in everyday life

The Aligarh Muslim University recently organised a series of lectures on "Computer in Every Day Life". It was a three day course and the participants were given

an opportunity to visit the computer centre of the university and observe its working. The programme forms part of the general evening courses which are being organised by the university for the benefit of the students and the community.

Bhopal school of life sciences

Dr. S.V. Ganpati has been appointed as Visiting Professor in the School of Biological Sciences, Bhopal University under the U.G.C. scheme of Visiting Faculty. This arrangement will help the newly formed School of Biological Sciences to come up rapidly.

High energy workshop held at Jammu

The High Energy Physics group of the Postgraduate Department of Physics of Jammu University organised a workshop from October 3 to October 14, 1977.

This was sponsored by the University Grants Commission. Twentyseven Physicists from different parts of the country participated in the workshop. These included scientific workers from the University of Madras, Utkal, Banaras, Jadavpur, Calcutta, Delhi, Punjab, Kurukshetra, Tata Institute of Fundamental Research, Bombay and ten local colleges and university teachers.

The participants presented papers and a series of review talks on research topics of current interest were held. The review talks were on the following topics: Phenomenology in multi-particle interactions, Anti-nucleon-nucleon interactions, Neutrino Physics.

The deliberations of the workshop were extremely useful and the members of the High Energy group of this department have been benefited very much from the same.

INDIAN SCHOOL OF MINES DHANBAD-826004

Advt. No. 420032/77

Dated October 28, 1977

The Indian School of Mines, which is deemed to be a University under the University Grants Commission Act, invites applications for the undermentioned posts relating to

ELECTRONIC INSTRUMENTATION

to assist in offering an industry-oriented Advanced Diploma course in Mining Electronics and Instrumentation, and to develop facilities in repair and maintenance in the field:

Two Senior Technical Officers	(Rs. 1100-1600)
Two Senior Technicians	(Rs. 650-1200)
One Senior Technical Assistant	(Rs. 550-900)
One Technical Assistant/ Skilled Technician	(Rs. 425-700)

Besides pay, ISM employees get allowances as admissible to Central Government employees. Total emoluments at the Rs. 1100/- stage currently come to Rs. 1403/-. at the Rs. 650/- stage to Rs. 890.50, at the Rs. 550/- stage to Rs. 763.50 and at the Rs. 425/- stage to Rs. 590.30. Higher initial salary may be granted to specially qualified and experienced candidates.

Age: Normally not more than 30 years in case of TA/Skilled Technician, and 35 years for other posts.

Further details and prescribed application forms are obtainable from the Registrar, Indian School of Mines, Dhanbad-826004 on sending a self-addressed envelope of size, 30 cm × 12 cm, affixed with postage stamps of the value of Rs. 2.65 only. Completed application forms should reach the undersigned on or before 30th November, 1977.

CANVASSING IN ANY FORM WILL BE TREATED AS A DISQUALIFICATION.

**S.K. BORDIA
REGISTRAR**

**INDIAN SCHOOL OF MINES
DHANBAD-826004**

Advt. No. 420034/77

Dated Nov 3, 1977

ANNOUNCEMENT OF FACULTY POSITIONS

I. The following vacancies exist at the Indian School of Mines—a 'deemed University' under the University Grants Commission Act, 1956:

1. **Five Professors:** One each in Mech Engg, Drilling Engg, Mining Machinery (all in the Deptt of Engg and Mining Machinery), Engg Geology (Deptt of App Geology) and Mine System Design (Deptt of Mining Engg).

2. **Three Assistant Professors:** One in Industrial Relations (for the Deptt of Industrial Engg and Mgt), One in Instrumentation (Deptt of Electronics and Instrumentation) and one in English (Deptt of Humanities and Social Sciences).

3. **Six Lecturers:** Two in Mining Engg (for the Deptt of Mining Engg) One in Mechanical Engg (Deptt of Engg and Mining Machinery), One in Geology (Deptt of Applied Geology), one in Mathematics (Deptt of Physics and Mathematics) and one in Electronics (Deptt of Electronics and Instrumentation).

Except the posts of Asstt Professor in Industrial Relations (which is currently a temporary vacancy) all posts are either permanent or likely to become permanent in due course. All appointments to the post of Professor would be made on a 5-year tenure basis in the first instance, subject to the usual 2-year probation.

Pay Scales and Upper Age Limits

Professor: Rs. 1500-60-1800-100-2000-125/2-2500 (50 years)

Asstt Professor: Rs. 1200-50-1300-60-1900 (40 years)

Lecturers: Rs. 700-40-1100-50-1600 (35 years)

Allowances admissible as per Government of India rules sanctioned from time to time. Total emoluments currently amount to Rs. 969/- at the Rs. 700 stage, Rs. 1503 at the Rs. 1200 stage, Rs. 1803 at the Rs. 1500 stage and Rs. 2203 at the Rs. 1900 stage.

Upper age limit relaxable in respect of certain categories and persons otherwise considered specially suitable.

II. Specialising in the field of earth sciences and mining technology, Indian School of Mines conduct two B. Tech programmes (in Mining Engg and Petroleum Engg), two M.Sc. programmes (in Applied Geology and Applied Geophysics) as well as three M. Tech programmes (in Mining and Mine Planning/Opencast Mining/Mining Machinery), two DISM/M. Tech. programmes (in Mineral Engg and Industrial Mgt), two post-graduate M. Sc. Tech programmes—one in Mineral Exploration and the other in Mining Geophysics. An additional M. Tech. programme (in Pet Prodn), on additional DISM/M. Tech. programme (in Fuel Engg), and two more M. Sc. Tech programmes (one in Engg Geology, and the other in Pet Expln) are expected to be started next year as also three (post-deploma level) Advanced Diploma courses in Mine Surveying, Drilling Engg, and Mining Electronics and Instrumentation.

The School also has an ambitious continuing education executive development programme (including about 40 courses per year), a strong R and D activity, and an approved scheme of institutional consultancy.

III. Information for candidates and prescribed application forms are obtainable from the Registrar, Indian School of Mines, Dhanbad-826004, on sending a self-addressed envelope of the size 29×12 cm affixed with postal stamps of the value of Rs. 2.70 paise. Application in the prescribed application form, complete in all respects, should reach the undersigned on or before **December 3, 1977**. Those in service are advised to apply through their employer (s).

CANVASSING IN ANY FORM WOULD BE A DISQUALIFICATION.

**S.K. BORDIA
REGISTRAR**

**Specialised marketing
management course**

Addressing the valedictory function of "Specialised Marketing Management Course" organised by the Director, Small Industries Service Institute, Ludhiana in DAV College, Amritsar, Sardar Bishan Singh Samundri, Vice-Chancellor, Guru Nanak Dev University said "In the modern world, marketing plays an important role in the growth and development of an enterprise. Marketing management comprises analysis, planning, implementation and control of programmes designed to achieve sales targets with a view to profit maximization. Marketing management has become indispensable for survival and growth particularly in economies with rapid rate of technological and social change, intense competition and highly discriminating consumers. Marketing is aimed at generating customer satisfaction and goodwill and long-run customer welfare".

Insufficient demand, credit restrains, power shortage, financial vulnerability to market fluctuation, lack of balance in production planning and marketing and inadequacies of management were the reasons behind the widespread sickness of small scale units, he added. He said in spite of these difficulties the number of registered units had increased from approximately 1.4 lakhs in 1972 to about 5 lakhs in 1975-76. The output of these industries had increased from Rs 2062 crores to Rs 5700 crores and their exports from Rs 151 crores to Rs 600 crores over the same period.

S. Samundri was of the view that the Associations of Small Scale Industries should oversee their own affairs and persuade their members to take a long term view of the problem rather than adopting a narrow and self-defeating get-rich-quick approach. The real breakthrough, he added, would be achieved when the small scale units would rise to complete on their own without any governmental props. He also suggested some measures for increasing the efficiency and com-

petitive power of small scale units.

In the end, he suggested that small scale sector should adopt a professional approach in management of their enterprises but it should be forward looking, keeping abreast of the latest technological and marketing trends abroad.

Social service by Pant Varsity students

A five-day National Social Service Programme was organised by the G.B. Pant University of Agriculture and Technology, Pantnagar in Dumka Bangar and Dhampur villages of Haldwani Block in Nainital district from October 31 to November 4, 1977.

Under the Social Service Programme, 51 B.Sc. Ag. students took up eradications of lantana, an obnoxious weed around a 3 km village road. They performed the work of cutting the weed and cleaning the road. During the second trimester which starts on November 16, 1977, the students will take up earth work and other activities related with the integrated rural development. A party of agricultural economists has already taken up the survey work to plan welfare activities for the around development of the village.

An important feature of the programme is active participation of the village people. During a visit of the Vice-Chancellor, Dr. Dharam Pal Singh to the site the village people thanked the university for taking up the work in the village.

Advanced mining system course offered by Indian School of Mines

As a part of its extensive Executive Development Programme, ISM organised the (second) course on Advanced Mining Systems for Senior Mining Executives during October 10-15, 1977 at Hotel Oberoi, Darjeeling. The course provided ideal setting for very close interaction between faculty and the participants for discussing the latest developments taking place in Systems and Concepts of Mining the world

over. The main objective of the programme was to consider the Mine as a Total System and to view its problems from larger and broader national perspectives.

The course attracted participants from diverse mining corporations like Bharat Coking Coal Limited, National Mining Development Corporation, Hindustan Zinc Limited, Central Coalfields Limited, and the Rajasthan Directorate of Mines and Geology—at the level of Deputy Chief Mining Engineers

and General Managers. The faculty for the course was drawn, besides ISM, from the Bureau of Public Enterprises, M/s Coal India Limited, the Cementation Company Limited and M/s Indian Explosives Limited.

The course covered the technical developments and advancements in the underground coal and metal mines as well as opencasting mining, application of industrial engineering techniques to mining; geomechanical aspects of mine planning; environ-

INDIAN SCHOOL OF MINES

DHANBAD-826004

Advt No. 420033/77

Dated November 1, 1977

Indian School of Mines, which is deemed to be a University under the UGC Act, wishes to recruit

A DEVELOPMENT OFFICER

in a permanent vacancy in the pay scale of Rs. 1100-1600 plus allowances as admissible to Government of India employees. Total emoluments currently payable at the minimum of the scale work out to Rs. 1403 only. Higher initial salary may be granted to specially qualified and experienced candidates.

Job Description: Mainly to assist the administration in

- (i) introducing examination reforms and semester system; and
- (ii) introduction of new academic programmes.

He will also be required to assist in the preparation of material for annual reports and other School publications, and in organising and providing secretarial back-up for meetings of Academic Council, Board of Research Studies, Examination Board, etc.

Qualifications

1. Master's Degree in Education/Sciences/Arts/Commerce/Administration or a Degree in Engineering/Technology, with not less than 60% marks. (Essential but relaxable in case of candidate otherwise considered specially suitable)
2. About six years administrative experience in an academic institution, etc., including about three years as Assistant Registrar (or equivalent position) dealing with management of academic and examination matters. (Essential)
3. Familiarity with the implementation of Semester System and Examination Reforms, and competency to draw up relevant rules, etc. (Essential)
4. Good drafting ability.
5. Experience of organising meetings and handling agenda papers and minutes. (Desirable)
6. Capacity to develop corporate life within an educational institution.

General

1. AGE normally not more than 40 years, relaxable in case of persons otherwise considered specially suitable and in respect of certain special categories.

2. APPLICATION in the prescribed form (obtainable, along with a set of General conditions from the Registrar, Indian School of Mines, Dhanbad-826004 on receipt of a self-addressed envelope of the size 30 cm x 12 cm affixed with postage stamps of the value of Rs. 2.65) should reach the Registrar on or before 26th November, 1977.

CANVASSING IN ANY FORM WILL BE CONSIDERED AS DISQUALIFICATION

**S.K. BORDIA
REGISTRAR**

ment and ergonomics in mining industry; planning and execution of shaft sinking projects; management of safety; integrated approach to mining system; investment decisions and application of computers in mining as well as a Case Study.

Professor R. D. Singh and Professor S.K. Bordia were the course coordinators; the course was inaugurated by Prof. G.S. Marwaha, ISM Director, who also led the session on Management of Safety.

This course is part of an extensive E.D. Programme developed by ISM over the past few years; this year the programme is expected to include nearly 25 incampus courses (covering a wide range of subjects from mine surveying, mineral engineering and petroleum technology to computer systems, linear programming and organisation development) and nearly 15 off-campus courses organised as far apart as Singareni, Goa and Khetri. That the activity is meeting a real need is borne out by the fact that some of the most successful courses are repeat efforts.

Indian Agricultural Universities Association to meet at Anand

The Executive Committee meeting of the Association was held in Krishi Bhawan, New Delhi on October 29, 1977. Vice-Chancellors of nineteen agricultural universities and representatives of Indian Council of Agricultural Research were present. One of the main topics discussed related to items for discussion at the next Convention of the Association to be held at Anand in January 1978.

The Association holds a Convention each year at which approximately five delegates from each university are represented. The Convention to be held in January 1978 will be the ninth in the series. The topics for discussion would be: Reorganisation and diversification of undergraduate education in the agricultural sciences; and Inter-institutional coordination of and collaboration in agricultural research in India.

Kashmir's continuing education programme

The University of Kashmir has started a continuing education programme. As the first step, the following three short-term courses have been organised: Home Science, Health and Nutrition, Interior Decoration.

About fortyeight persons have joined the courses, some of them having opted for two or even three courses. The programme is scheduled to be completed by the end of November, 1977. It was inaugurated by the Vice-Chancellor.

The aim of continuing education is to extend the benefits of education to the community at large, especially those persons who, for various reasons, have not been able to avail themselves fully of the facilities. It has been felt that the university should not confine its attention to whole-time students only but, to the extent possible, cater also, for those who are busy with various occupations. With the rapid growth of knowledge, even highly educated persons feel the need of bringing their knowledge and skills up-to-date from time to time. Besides, there are people who feel that they have serious gaps in their education which need to be removed.

The university is, accordingly, planning to start courses of various types for men and women in different walks of life, for example, working classes, businessmen, housewives, teachers, doctors, engineers etc. The courses will, of course, be started according to priority of need, and will be spread over the next few years and are likely to develop into a massive programme in due course.

The three courses mentioned above are intended to benefit housewives in particular and will be conducted by experts in their respective fields. Each course will consist of a series of lectures supported, where necessary, by demonstrations and practical work. For the convenience of the participants instruction will be imparted in the evening. No

fees have been prescribed for joining these courses.

INSA elections

The Indian National Science Academy at its meeting held on October 15, 1977 re-elected Dr. R. Ramanna, Director, Bhabha Atomic Research Centre, Bombay as the President of the Academy. The other officers re-elected for the ensuing year are: **Vice-Presidents:** Prof. R.C. Mehrotra, Vice-Chancellor, University of Delhi; Prof. A.K. Sharma, Head, Dept. of Botany, Calcutta University. **Foreign Secretary:** Dr. A.R. Verma, Director, National Physical Laboratory, New Delhi. **Secretaries:** Prof. A.N. Mitra, Head, Dept. of Physics & Astrophysics, University of Delhi; Dr. M.G. Deo, Professor of Pathology, All India Institute of Medical Sciences, New Delhi. **Editors of Publications:** Prof. L.S. Kothari, Professor of Physics & Astrophysics, University of Delhi, Prof. K.N. Saxena, Head, Dept. of Zoology, University of Delhi.

Prof. B. Ramachandra Rao, Vice-Chairman, University Grants Commission, was elected Treasurer.

The members of Council elected are: Dr. F. Ahmad, Commissioner, Mines and Geology, Government of Jammu & Kashmir; Dr. D.P. Antia, Calcutta; Prof. A. Bose, West Bengal; Prof. J. Ganguly, Chairman, Dept. of Biochemistry and Head of Advanced Centre of Biochemistry, Indian Institute of Science, Bangalore; Dr. J.S. Kanwar, Associate Director, International Crops Research Institute for the Semi-Arid Tropics, Hyderabad; Dr. C.R. Krishna Murti, Deputy Director, Industrial Toxicology Research Centre, Lucknow; Prof. N. Balakrishnan Nair, Head, Deptt. of Aquatic Biology & Fisheries and Dean, Faculty of Science, University of Kerala; Prof. M.S. Narasimhan, School of Mathematics, Tata Institute of Fundamental Research, Bombay; Dr. Y. Nayudamma, Central Leather Research Institute, Madras; Dr. A.S. Paintal, Director, V.P. Chest Institute, University of Delhi; Dr. N. Parthasarathy, Madras; Prof. V. Puri, Professor Emeritus,

Institute of Advanced Studies, Meerut University; Prof. C.N.R. Rao, Professor, Solid State & Structural Chemistry Unit, Indian Institute of Science, Bangalore; Prof. S.N. Sarkar, Head, Dept. of Applied Geology, Indian School of Mines, Dhanbad; Prof. G.P. Sharma, Dept. of Zoology, Panjab University, Chandigarh; Dr. K. Sundaram, Director, Biomedical Group, Bhabha Atomic Research Centre, Bombay; Prof. S.K. Trehan, Professor of Applied Mathematics, Panjab University, Chandigarh; Dr. H.V.K. Udupa, Director, Central Electro-Chemical Research Institute, Karaikudi.

Prof. S. Deb, FNA, formerly Professor and Head, Geology Department, Jadavpur University Calcutta, will be the representative of the Asiatic Society, Calcutta.

Dr. B.D. Nagchaudhuri, will represent the National Academy of Sciences, Allahabad.

The Indian Science Congress Association, Calcutta will be represented by its General President, Dr. S.M. Sircar.

Dr. A. Ramachandran, FNA, Secretary, Department of Science and Technology will be representative of the Government of India.

Dr. B.P. Pal, immediate Past President of the Academy is also a member of the Council.

Bombay to have separate architecture faculty

A separate faculty of architecture will be instituted in the University of Bombay. After its constitution all the matters relating to the architecture curriculum will be handled by this body which will comprise students and teachers of the J.J. College of Architecture apart from the member of the senate and the academic council. The present ad hoc Board of Studies will be replaced by a regular board of studies and a special consultative committee will be formed for the board of studies consisting of four student representatives apart from the regular members. A new standing committee will also be constituted to look after the functioning of the J.J. College of Architecture.

Inadequate Library Services

Educational authorities and scholars have shown great concern over the fall in the standards of education—especially at the higher level, where facilities of equipment, books and journals, in the institutions are stretched to the breaking point. The failure rate at the first degree level is about 50 per cent. Further, 70 per cent of students who complete their postgraduate education in Arts and Commerce are placed in the third division and more than 40 per cent of successful students in the postgraduate examinations in sciences are placed in the third division.

One of the reasons for this state of affairs is the dearth of standard books and research journals (back as well as current issues) in the libraries, documentation and information services of most of the universities and the institutions of higher learning. For example, many university libraries, do not receive even 2,000 titles, whereas most of the university libraries in America, subscribe to 10,000 and odd current journals. It has been said that 'You cannot have a quality education without a quality library'. A library, considered an essential department of an educational institution, receives step-motherly treatment in the annual budgets of the institutions.

There has been a vast expansion of knowledge, mass communication and mass literacy. The advances in science and technology have led to a widening of the horizon putting increasing pressure on the libraries and information services. Scholars now look at libraries as centres for dissemination of knowledge. Many progressive librarians have started issuing at regular intervals 'Indexing and Abstracting Services' and 'Current Awareness Services.' The latest of these services is called the 'Selective Dissemination of Information (SDI), where profiles of individual scholars are matched against the new additions made in the information base of the library and pertinent information communicated to the respective scholars. For retrospective service, the entire information file has to be searched. If the infor-

mation file to be searched is sufficiently large it has become necessary to use sophisticated computers for providing efficient SDI.

There is, therefore, need for quality personnel trained in the art and science of collecting, collating, organising and disseminating knowledge in the form and at the level required by the community they serve. These people have to be adequately rewarded for their services so that better qualified people would enter this profession and help improve the standards of education.

Many of the postgraduate departments in various institutions do not have well-equipped libraries and laboratories, to ensure excellence of teaching. With the result that the students who become teachers after completing their studies continue the outdated and ineffective teaching which they themselves had received as students.

The UGC pay commission has recommended substantially higher grades to attract better qualified people to enter the teaching profession. Librarians and other professionals who earlier enjoyed parity of grades with the faculty have been offered lower grades. Apparently, the authorities consider librarians as keepers of books, non-academic administrative staff and do not regard their services as important in the teaching process. This has demoralised the librarians and others engaged in the dissemination of knowledge. Apart from providing adequate finance to enable institutions to acquire best publications, coming out in increasing number year after year, these services have to be manned by professionally qualified people. Their quality of service is likely to be affected adversely in the absence of any improvement in their grades service conditions, status and working environments. In addition to providing parity of pay grades with the faculty, it is imperative to focus attention on their service.

Mohan Bhatia
Centre of Studies in Science Policy,
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New Delhi.

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Chattopadhyay, Amaresh. Some problems on elastodynamics. Visva-Bharati.
2. D.B. Singh. A study of certain normalized univalent and multivalent functions. I.I.T., Kanpur.
3. Venkatasiva Murthy, K.N. Magnetohydrodynamic viscous stratified flow. Sri Venkateswara University.
4. Waghmare, Bhimrao Baburao. Studies in thermodynamics and shock waves. Shivaji University.

Physics

1. Bhalerao, R.S. Nuclear-structure studies via non-radiative free- and bound-pion absorption reactions. I.I.T., Kanpur.
2. Chattopadhyay, Susanta Kumar. Study of thermal diffuse scattering of X-rays from organic crystal. University of Burdwan.
3. Das, Kali Charan. Axially symmetric space-times in general relativity. University of Burdwan.
4. Deshmukh, Dattatraya Digambarao. Elementary excitations in solids. Marathwada University.
5. Kusaraju, Gubbala. Studies on the Compton and photoelectric interactions of low energy photons. Andhra University.
6. Mishra, S.G. Thermal properties of nearly and weakly ferromagnetic Fermi systems: Spin fluctuation effects. I.I.T., Kanpur.
7. Moharil, Sanjiv Vasantro. Nature of defects produced in alkali halides coloured in an electrodeless discharge. Nagpur University.
8. Navaneethakrishnan, K. Theoretical investigations on impurity states in elemental semiconductors. Madurai University.
9. Raman, T. Mossbauer effect studies in alkali borate glasses. I.I.T., Kanpur.
10. Ravindranath, K. Normal coordinate analysis of molecules and spectroscopic studies of H-bonding. Osmania University.
11. Sarma, Chaturvedula Rama Narasimha. Electron paramagnetic resonance studies of some copper complexes. Andhra University.
12. Satyendra Prasad, Mokkapati. Studies on the elastic scattering of low energy photons. Andhra University.
13. Venkataramanmurthi, Desiraju. 35 CL NQR investigations in certain molecular crystals. Andhra University.
14. Verma, Neelkanth. To study electrical and optical properties of sodium bromate and sodium chlorate crystals in detail. Ravishankar University.

Chemistry

1. B.P. Singh. Isoprenoids: Rearrangements and synthesis. I.I.T., Kanpur.
2. Balasubramanian, V. Chlorination with chloramine—T: A kinetic and mechanistic study. University of Madras.
3. Bhand, Madhukar Dharma. Electrical and optical properties of some electroluminophors. Shivaji University.
4. Devadasan, G. Studies in the chemistry of zirconium compounds. University of Kerala.
5. Durai, V. Electric dipole moments, dissociation constants, and electronic absorption spectra of some 4-alkylsulphonylanilines. University of Madras.
6. Dwivedi, K.K. Studies on heavy ion tracks in solid dielectrics. I.I.T., Kanpur.
7. Goswami, Pannalal. Synthetic studies on sesquiterpenoids. University of Calcutta.
8. Malhotra, Ramesh Chandra. Studies in the oxidation of some hydrazides and hydrazens with active manganese dioxide. Jiwaji University.
9. Misra, Chittaranjan. Synthetic studies on terpene alkaloids. University of Calcutta.
10. Misra, Devendradutt. Studies on anion-exchange selectivities in acetone-water medium. Jiwaji University.
11. Muraleedharan, P.R. Studies on absorption of high polymers. Sardar Patel University.
12. Patel, Jitendrabhai Chhotabhai. Study of Polymerization by Friedel-Crafts reactions. Sardar Patel University.
13. Patel, L.N. Studies in corrosion of 2-5 aluminium alloy and its inhibition. Gujarat University.
14. Patel, Rajnikant Muljibhai. Studies on polymeric resins: The condensation of aromatic hydrocarbons and formaldehyde. Sardar Patel University.
15. Ramasesha, S. Monte Carlo simulation of Ising chains and polytypes and low spin-high spin transitions in solids. I.I.T., Kanpur.
16. Shukla, P.N. Distribution of nitrogen and lithium in samples of moon, meteorites and tektites. I.I.T., Kanpur.
17. Sivasankara Pillai, V.N. Electrometric titrations using some halogen bearing organic compounds as oxidimetric titrants in non-aqueous or partially aqueous media. University of Kerala.
18. Sundaravelu, T. Electric dipole moments, dissociation constants and electronic absorption spectra of some 4-alkylthionilines. University of Madras.
19. Suryanarayana, Iragavarapu. Spectroscopic studies of the influence of solvents on the stabilities of intramolecular hydrogen bonded systems. Osmania University.
20. Tiwari, Mahadeo Prasad. Role of pH and related factors in the liquid-solid absorption and chromatography of dyes. Ravishankar University.
21. Vyas, M.H. Studies on recovery of Lithium and Boron salts from indigenous resources. Gujarat University.

Earth Sciences

1. Ghosh, Alok Kumar. Structures along the central part of the Singhbhum shear zone and their relation to metamorphism. University of Calcutta.
2. Madhavan Nair, K. Sedimentology of carbonates in Cauvery Basin. Osmania University.
3. Sarma, Vinnakota Venkata Rama. Sedimentation in North Godavari coal field, Andhra Pradesh. Osmania University.
4. Srisailanath, A. Groundwater investigations by electrical resistivity methods in granitic terrains of Musi Ayacut Region, Nalgonda District, Andhra Pradesh, India. Osmania University.

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1. Abraham, M.C. Investigations on the kinetics of reduction of ferric oxide with graphite. I.I.T., Kanpur.
2. Chattopadhyay, Sanjit Kumar. The scintillation of satellite beacons in the equatorial ionosphere. University of Calcutta.
3. Gairola, B.K. Implementation of relational database: An integrated approach. I.I.T., Kanpur.
4. Gangopadhyay, Gautam. Some pole assignment algorithms and their application in linear system design. University of Calcutta.
5. Krishna, S. An approach to software reliability evaluation through programme testing. I.I.T., Kanpur.
6. Narayana Rao, Yarlagaadda Surya Prakasa. Study of the effect of freely rotating promoter on heat transfer and pressure drop in pipe. Andhra University.
7. Raghavan, K.S. Finite element studies on inelastic response of beams and plates. I.I.T., Kanpur.
8. Ray, Tushar Kanti. Study on the mechanism of fatigue failure in some F.C.C. and H.C.P. metals. University of Calcutta.
9. Yadav, Dayananda. Response of moving vehicle to ground induced excitations. I.I.T. Kanpur.

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Biochemistry

1. Rane, Dhananjaya Kautikrao. Biochemical changes in sterilised milk. Marathwada University.
2. Saxena, Arvind Kumar. Studies on the fatty acid synthetase complex and lipid metabolism in lactating buffalo mammary gland. Punjab Agricultural University.
3. Sharma, Ashwani Kumar. Metabolism of erucic acid in tissues of female rats. Punjab Agricultural University.

Botany

1. Giridhar, G. Invitro and invivo studies on the origin of some chloroplast protein in the C_4 plant, *Sorghum vulgare*. Madurai University.
2. Majumdar, Gita. Studies on floral morphology and cytology in relation to taxonomy of the family Euphorbiaceae. University of Calcutta.
3. Nayak, Anik Kumar. A study of mineral circulation in some forest trees with special reference to teak, *Tectona grandis* Linn. University of Saugar.

Zoology

1. Babu, K. Arbindo. Cytogenetic and cytochemical studies on cells. Gujarat University.
2. Buch, R.P. Studies on some aspects of mamalian testicular and epididymal physiology. Gujarat University.
3. Chauhan, Ramesh Chander. Studies on the caudal neurosecretory system in teleosts. University of Indore.
4. Dasharatham Goud, J. Population genetics of five endogamous tribal groups of Andhra Pradesh. Osmania University.
5. George, Jacob. Studies on planktonic ostracods of the Northern Indian Ocean. University of Cochin.
6. Hota, Hemanta Kumar. Haematology of common Indian garden lizard. University of Calcutta.
7. Jeyaraman, S. Modulation of humoral and cell-mediated responses to sheep erythrocytes in the lizard, *Calotes versicolor*. Madurai University.
8. Mahammad Samsul Haque. Studies on plant parasitic nematodes of West Bengal. University of Burdwan.
9. Muraleedharan, D. Studies on some aspects of digestion in *Dysdercus cingulatus*. University of Kerala.
10. Natarajan, V. Studies of certain biological aspects in assessment of the fisheries of the chilka lagoon, Orissa, India. University of Calcutta.
11. Padma. Studies on histochemical, biochemical and

physiological aspects of paramphistomum. Osmania University.

12. Paul, Ravindra. Studies on the Porcellanidae (Crustacea, Decapoda, Anomura) of the Karwar Area Karnatak University.

13. Soni, V.C. Feeding and locomotory adaptations in birds, Family Phasianidae. Gujarat University.

14. Umadevi, Dommeti Venkata. Copepod parasites of marine fishes of Andhra Coast including some aspects of histochemistry. Andhra University.

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1. Mallick, Bikram. A study on adoption behaviour of farmers in Orissa towards improved method of potato cultivation. Orissa University of Agriculture and Technology.
2. Parkash Kumar. Estimates of combining ability and stability parameters in Pearl millet, *Pennisetum typhoides* (Eurm) Stapf and Hubb. Haryana Agricultural University.
3. Ram Autar Singh. Studies on *Helminthosporium* S.P.P. occurring on graminaceous hosts with special reference to those occurring on wheat in India. Bihar University.
4. Suresh Kumar. Studies on the production problem of tomatoes, *Lycopersicon esculentum* Mill during summer season. Haryana Agricultural University.

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1. Asit Kumar. Studies on cultural, serological and biological characters of food poisoning strains of *Clostridium perfringens* type A. Haryana Agricultural University.
2. Ravindra Kishore. Pharmacodynamic and toxicologic studies of indigenous plant *Kalanchoe intergra*. Haryana Agricultural University.
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1. Rajalakshmi, R. A study on the motivational factors in limiting the size of the family. University of Madras.

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JAMIA MILLIA ISLAMIA
Jamia Nagar, New Delhi-110025
Advt. No. 13/77-78

Applications on the prescribed form, which can be had from the Registrar's Office on any day (except Sunday and Holiday) between 9.00 a.m. to 12.00 noon or by sending self addressed and duly stamped (25 paise) envelope of 10x23 cms., are invited alongwith postal order of Rs. 3/- for the following post so as to reach the Registrar by 1.00 p.m. on December 5, 1977.

Adequate knowledge of Urdu and Hindi is a desirable qualification.

D.A., C.C.A. and H.R.A. will be given as per Jamia rules.

Relaxation in any of the qualifications may be made on the recommendation of the Selection Committee in exceptional cases.

Principal (Grade: Rs 1500-2500), Teachers' College

A high second class Bachelor's degree; a first or high second class Masters degree of an Indian University or an equivalent foreign qualification; a doctorate degree or published work of an equivalent standard and independent published work of high standard in addition to the published work referred to above; at least 5 years experience of teaching Hons./Post-graduate classes, or 10 years experience of teaching under-graduate classes and 5 years administrative experience.

Free unfurnished accommodation will be provided subject to the payment of their own electricity and water charges.

IMPORTANT

Applications without attested copies of mark-sheets, certificates, degrees, diplomas or without Postal Order and on plain paper will not be entertained.

Dated : 12.11.1977. **Zamir Hasan**
OFFG. REGISTRAR

* * *

PUNJABI UNIVERSITY
PATIALA

Advt. No 158/PRO/Estt./ A/1/77

Applications are invited for appointment to the post of Registrar in the pay-scale of Rs 1100-50-1300 EB-60-1600 (likely to be revised to Rs 1500-2000):

Qualifications

Candidates should hold at least a second class Master's degree from an Indian University or should possess equivalent qualifications from a foreign University with at least ten years' experience in a highly responsible position in a University/Educational Institution or Government office. Persons with experience of University administration will be preferred.

The Selection Committee might relax the qualifications and experience in the case of a candidate of exceptional

merit. It would be open to the Committee to consider even those who have not applied for the post.

Appointment to this post will be made for a term of four years or upto the age of 60 years, whichever is earlier. Higher start within the grade admissible depending upon the ability and experience of the candidate. Free unfurnished accommodation will be provided at the University Campus. Dearness allowance, Provident Fund and Medical facilities admissible according to the University rules.

Applications complete in all respects on the prescribed form accompanied by a crossed postal order worth Rs 5/- (Rs 2/- for candidates belonging to Scheduled Castes/Tribes and Backward classes) drawn in favour of the Registrar, Punjabi University, Patiala, should reach the University by November 25, 1977. The forms can be had from the Superintendent (Establishment) by sending a self addressed envelope of the size of 23x 10 cms stamped with 25 paise postage.

Persons already in service should apply through proper channel. Government servants who are not in a position to submit their applications through proper channel before the due date should submit an advance copy before the due date and regular applications through proper channel by November 30, 1977.

P. K. Kapoor
REGISTRAR

* * *

INDIAN INSTITUTE OF
TECHNOLOGY
KHARAGPUR

Advertisement No. R/27/77

Applications are invited for the temporary post of ASSISTANT PROFESSOR for the Research Scheme 'Studies on Electromagnetic Scattering and target identification' sponsored by the Department of Electronics, Government of India, tenable in the Radar and Communication Centre, I.I.T., Kharagpur (West Bengal):

The post is purely temporary during continuance of the research scheme.

Scale of pay: Rs. 1200-50-1300-60-1900 plus D.A. as admissible.

Age: Preferably between 30 and 45 years.

Qualifications & Experience

Essential: Master's degree in Electronics and Electrical Communication Engineering or equivalent with Doctorate degree in microwave antennas or in related field such as electromagnetic scattering diffraction of radio waves etc. with a minimum of 5 years experience in research and/or teaching.

Desirable: (i) Publication in reputed journals. (ii) Experience in carrying out independent research. (iii)

Corporate membership of recognised institution.

Application form may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23 Cm x 10 Cm. Applications accompanied with an application fee (non-refundable) of Rs 7.50 (Rs 1.87 for SC/ST candidates) payable by means of crossed Indian Postal order to the Indian Institute of Technology, Kharagpur at Kharagpur-2 Post Office should reach the Registrar, I.I.T., Kharagpur by the 26th December, 1977.

* * *

INDIAN INSTITUTE OF
TECHNOLOGY
KHARAGPUR

Advertisement No. R/28/77

Applications are invited for the undermentioned posts at the Indian Institute of Technology, Kharagpur (West Bengal):

Posts: a) Professor (Electrical Engg. Deptt.)

b) Professor (Curriculum Development) Electrical Engg. Deptt.—Post Temporary

Scale of pay: Rs 1500-60-1800-100-2000-125/2-25000 plus D.A. at admissible rates.

Age: Preferably below 50 years.

Qualifications

Essential

First class Master's Degree or Second class Master's Degree with Doctorate Degree in Electrical Engineering with a minimum of 10 years' experience in teaching at postgraduate level in an institution of University standard and research or development work, having specialised knowledge in one or more specified subjects.

Desirable

- Research publications in reputed journals
- Experience in guiding research
- Ability to organise and develop laboratories in the specialised fields
- Experience in planning and development of undergraduate curriculum in Electrical (for post (b))

Only capable persons with uniformly good academic career, aptitude for teaching postgraduate and undergraduate classes, Research and Development work need apply.

Application form may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23 Cm. x 10 Cm. Applications accompanied with an application fee (non-refundable) of Rs 7.50 (Rs 1.87 for SC/ST candidates) payable by means of crossed Indian Postal order to Indian Institute of Technology, Kharagpur at Kharagpur-2 Post Office should reach the Registrar, IIT, Kharagpur (West Bengal) by the 26th December, 1977.

University lews

A CHRONICLE OF HIGHER EDUCATION & RESEARCH DECEMBER 1, 1977 80 PAISE



Shri Morarjibhai Desai, Chancellor of the Gujarat Vidyapith, delivering the convocation address at Ahmedabad.

UNIVERSITY OF JAMMU

JAMMU

Notice

Applications on prescribed form are invited for the following posts so as to reach the Registry on or before **December 31, 1977**.

1. Professors (Rs. 1500-1900) in

I. Organic Chemistry

II. Physics (Theoretical physics-phenomenology in High energy physics)

III. Geology (Sedimentology)

2. Readers (Rs. 1100-1600) in

I. Applied electronics

II. Punjabi

3. Coordinator in law (Rs. 1100-1600)

4. Lecturers (Rs. 700-1300) in

I. Mathematics: Modern Analysis (Real and Complex)

II. Hindi

III. Law

IV. Inorganic/Analytical Chemistry

V. Physics (High Energy/Solid State Physics)

VI. Botany (Limnology)

VII. Zoology (Limnology)

5. Scheme posts in Physics Deptt.

1. Reader: One: Rs. 1100-1600

2. Lecturer: One: Rs. 700-1300

3. Research Associate: One: Rs. 1000/1200/1400 p.m. Fixed depending upon qualification and experience.

4. Computer Programmers: Two: Rs. 500-30-800

5. Electronics Engineer: One: Rs. 700-1300

For full details and prescribed application forms, please apply by sending a self addressed envelope of 25 CMS and 10 CMS. Size Bearing stamps worth Rs. 1.50 Paisa alongwith a crossed postal order for Re. 1/- drawn in favour of the Registrar, University of Jammu, Canal Road, Jammu Tawi-180001, J&K State, cashable at Jammu Post Office.

O.P. Sharma

DEPUTY REGISTRAR (ADMN)

* * *

JADAVPUR UNIVERSITY

CALCUTTA-32

Corrigendum Employment

Notification No. A2/C/3/77.

Reference above notification add "Applied Mechanics" to the fields of specialisation for the post of Professor of Mechanical Engineering.

REGISTRAR (Offg.)

* * *

THE MAHARAJA SAYAJIRAO

UNIVERSITY OF BARODA

Notification No. 11

Applications are invited for the following posts in the prescribed application forms which will be available along with details of qualifications and specialisation from the undersigned on prepayment of Re 1 by means of cross-

ed Indian Postal Order along with a self addressed envelope of 30 cms. x 12 cms. separately for each post.

(i) Professors of (1) Electrical Engineering, (2) Mechanical Engineering, (3) Civil Engineering, (4) Textile Engineering, (5) Chemical Engineering, (6) Pharmaceutics, (7) Geography.

(ii) Readers in (1) Electrical Engineering, (2) Applied Mathematics, (3) Textile Chemistry, (4) Pharmaceutical Technology, (5) Pharmacology, (6) Business Administration, (7) Law, (8) Child Development.

(iii) Lecturers in (1) Electrical Engineering, (2) Applied Mechanics, (3) Civil Engineering, (4) Mechanical Engineering, (5) Electrical/Mechanical Engineering (Part-time Degree Course), (6) Metallurgical Engineering, (7) Textile Chemistry, (8) Pharmaceutics, (9) Textile Engineering, (10) Applied Chemistry, (11) Business Economics, (12) Geography, (13) Banking, (14) Law.

Scales

(1) Professor : Rs. 1500-60-1800-100-2000-125/2-2500

(2) Reader : Rs. 1200-50-1300-60-1600-Assessment-60-1900

(3) Lecturer : Rs. 700-40-1100-50-1300-Assessment-50-1600

The applicants at the time of requesting for the prescribed forms should mention very specifically the post for which the forms are required.

Application forms will be available upto 5-1-1978 and requests for the same thereafter will not be considered.

The application forms should be accompanied by Crossed Indian Postal Order of Rs 7-50 and should reach the Registrar on or before **16-1-1978**. Candidates, if called for interview will have to come at their own expense.

All things being equal preference will be given to candidates belonging to Scheduled Castes and Scheduled Tribes.

K. A. Amin
REGISTRAR

* * *

BANARAS HINDU UNIVERSITY

Corrigendum to Advertisement

No. 8/1977-78-Item No. 2 for the post of Reader in Chemical Engineering (three posts)

The qualifications may be read as follows :

Qualifications Essential

(1) First or second class Master's Degree in Chemical Engineering or an equivalent qualification. (2) Doctorate Degree and/or published work of an equally high standard in Chemical Engineering. (3) About five years experi-

ence in responsible position in teaching/research/industry. (4) a. Good knowledge of Computer aided Design of Chemical Plants and equipments/systems Engg. / simulation and optimization techniques (for one post). b. Specialisation in one or more of the following fields : Petroleum Refining Engg./Transport Phenomena/Unit Operations/Nuclear Engg. / Thermodynamics / Mass Transfer/Reaction Engg./Heat Transfer/Fluid Dynamics/Process Engg./Process Plant and equipment design/separation techniques Bio-Chemical Engg. (for two posts).

Corrigendum to Advertisement

No. 9/1977-78-Item No. 40 for the Post of Lecturer in P. S. M.

Note No. 3 will read as follows :

"The selected candidate will have to reside at Rural Health Centre, Chirai-gaon as per requirements of service. Available University accommodation will be provided. In case of non-availability of quarter, the candidate has to make his own arrangement within 2 km. radius of the Centre."

* * *

UTKAL UNIVERSITY

Advt. No. ESTT. I/22864/77

Dt. 19. 11. 77

Applications are invited for the post of Principal-cum-Professor for the M. S. Law College, Cuttack.

Qualification

1. The candidate shall have :

- A good academic record with a first or high second class master's degree in the subject.
- Doctorate or adequate research experience.
- Capacity for conducting and guiding a research work and undertaking P. G. teaching in Law.
- Shall have ten years teaching and/or professional experience at the bar, at a High Court or higher level out of which at least 5 years should have been in teaching.

Scale of pay

Rs. 1500-60-1800-100-2000—125/2 2500/-

Seven copies of application forms shall be supplied to the candidates from the office of the undersigned in person on payment of Rs. 7.00 (Rupees seven only) or by post on receipt of a Crossed Indian Postal Order for Rs 8.50 paise payable to the Registrar, Utkal University, Vani Vihar, Bhubaneswar. No money order will be entertained for the purpose. The last date of receipt of applications for the posts is **20. 12. 77**.

Other details can be had from the University Office along with the application forms.

RÈGISTRAR

UNIVERSITY NEWS

Vol. XV DECEMBER 1
No. 23 1977

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Hony. Editor : ANJNI KUMAR

Higher Education and Contemporary Indian Society

S. N. Singh

The University, as a community of scholars engaged in "the pursuit of truth" was mainly concerned with the "transmission and extension of knowledge" with occasional preference for 'Culture' and 'Excellence'. It was not conscious of its relationship to the general purpose of society. The situation, however has changed after the Second World War. It is now generally felt that in addition to its traditional functions, the University owes certain obligation to society. Our expectations from the University have now increased. They are expected "to perform the role of the social critics, to act as the agents of social change and progress, and to lead the society to a better order by extending its knowledge and expertise beyond its four walls. The idea is that the universities should be "socially sensitive" and "relevant".

The universities in this country, unmindful of their social functions, during the contemporary context, when the Indian society, under the stress and strain of multidimensional change, is being refashioned and restructured by an aggregate of deep penetrative forces, have remained bewildered and failed to make the correct option amongst different alternatives some of which are rather radical. Incapable of distinguishing the populist politics of right reaction and left adventurism, from the real issues, accepting the pressure of a microscopic section of politicalised youth, and miscalculating the interest of the urban educated middle class to be the national need, the real issues were allowed to be diluted.

The argument that the indecision about the finalization of national goals and the transitional state of polity in India are responsible for the 'identity crisis' in the campus, holds no good ground, because "the university is not the microcosm of society, it is an academic community, with a historic exemption from full integration into the society, and having an autonomous position, in order to be able to fulfil its own responsibility which is to conduct untrammelled enquiry into all questions". Its function was to point out the real goals to the society, because 'its duty is not merely of response but of creation, it must not merely give society what it needs, but show it what it ought to need'. The university at present cannot afford to be insensitive and indifferent to its social climate. It has, however, to avoid becoming too much contemporaneous because this would make education superficial. Even the search for mere 'usefulness' and 'economic values' of education in the absence of broader social perspective is not going to cut ice as "to be always after seeking useful, says Aristotle, does not become free and exalted soul".

Reader in Education, Banaras Hindu University

The function of the university is all inclusive: economic, social, political and cultural. It must provide right solution to the social crisis.

India, a poor country with rich and unexploited resources, has to solve enormous problems in her way of building an affluent but egalitarian social order. The shortage of trained manpower to manage certain areas of economy and simultaneous unemployment of educated youth denote the lack of rational coordination between our educational and economic planning. The bookish and theoretical nature of professional training, the unrealistic and archaic courses, and the adolescent and posterior equipments are responsible for the miserable performance of our graduates in actual working situations. This, however, has not been taken seriously by the Indian temples of learning. Only sterile seminars, which generate much heat but produce insufficient energy for real work have been organised. This fails to serve any useful purpose.

The professional education in India requires radical change. A well planned co-ordination between university, industry and agriculture is necessary for harmonising the demand and supply of manpower. No university can create jobs, they are created by the state and entrepreneurs. The best skilled man can remain out of employment in case the trained manpower is more than the existing job opportunities. Admission to professional courses should be made after the assessment of the requirements of various employment agencies. The present practice of "partial practical training programmes" should be given up and complete integration between theory and practice be achieved by bringing employment agencies and universities closer to each other and arranging exchange between professors and professional personnels. This is essential for breaking isolation of our technical and agricultural education and making it need used.

The productive activity and social climate are interdependent. In addition to the five factors, mentioned in the books of traditional economists, any efficient economy needs something more. It requires an atmosphere in which the worker can make his best performance. In a certain type of society and with a particular set of values and beliefs no workman can put his best in the task he is engaged. Certain values, and attitudes in our culture being inconsistent with an efficient economic system are not conducive to sufficient production. The imbalance between our productive and cultural system is creating different types of crises in economy to which our society has yet to find solution. In the absence of radical transformation in the philosophy of professional education and our attitude towards wealth and work, the crises can hardly be averted. However, little attention is being paid to this fact.

Instead of integrating knowledge and skill with the 'morality of work', our education has developed love for the system more and a style of easy going life among the graduates who lack the perspective of real issues in industry and agriculture: and with no commitment to society. Education, which they have received, has ill equipped them for understanding their social responsibilities and because of this unawareness

they have become the tools in the hands of the vested interests. They may know their job well but they do not understand its social goal and implications. The attempt to solve this problem by including humanities and social sciences in the courses of technical education, as it has been done in the Indian Institutes of Technology, has hardly produced a commendable result. The gulf between technology and humanities should completely be bridged at the graduate level in these institutes. The postgraduate courses may afford to specialise in different disciplines. The scientist must know both: how to break the atoms and how to use them for the welfare of society. The university can play a positive role in humanising science, otherwise the cult of specialization would go on dehumanising the man. The university should aim at producing integrated personalities rather than narrow specialists who are well versed in this or that profession without sufficient social sensitivity. The lesson in this regard can be learnt from the Soviet Polytechnics.

Ours is a plural society. "The ramifications of its plurality extends to so many sectors of collective life that one might as well make a distinction and say that India is plural in the most comprehensive sense of the word. Sociologically, it comprises different strata of people living as contemporaries and a pattern of life that is widely divergent in its value structure, norm and behaviour. One wonders how different social entities belonging to different milieu, co-exist temporarily in the same political community. Ethnically, India is a country of man races which have been intermixing culturally and linguistically. There are well marked and almost defined regions and sub-regions where people speaking an alive language cherish the memory of their past grandeur and distinctive heritage with twin sentiments of alliance and discord with other contiguous regions in India. In terms of religious communities it includes seven major segments: Hindus, Muslims, Christians, Sikhs, Jains, Buddhists and Parsis". Conscious of maintaining their separate 'identity' they resist any programme of nation building which touches their sensitivity, especially the religious and the linguistic and thus add further complications to the process of national integration. We forget our sense of nationhood during the periods of peace and normalcy and regain it only when there is an external danger or an emergency. In spite of a strong government at the centre armed with more constitutional powers in comparison to states, instances are not looking when nation's unity came across serious internal threats. The solution of the problem warranted intelligent guidance from the elite of the campus who, however, preferred to maintain apathetic silence.

In addition to the political measures, any programme for nation-building and national integration should include the abolition of regional imbalances and the socio-economic disparities, bridging the wide gulf between the rich and the poor, masses and the elite and the ruler and the ruled. The feeling of insecurity among the minorities, whether religious or linguistic, is to be removed. The myth that the culture and religion have sustained unity for ages in

this sub-continent, in spite of political balkanization, has to be exploded from the minds of the intelligentsia because they are losing fast their hold upon Indian mind during the age of science and technology. The problems of the present day India are so complex and complicated that old prescriptions cannot eradicate the malady. In the absence of economic prosperity as well as equality, these factors would hardly prove to be of much help.

The universities in India can do a lot in this direction by reorganising its curriculum, teaching, research and extension work. The rewriting, and reinterpretation of India's history, with a view to promoting communal harmony with an emphasis on man's struggle against poverty, ignorance and obscurantism with proper stress on nation's composite culture and with a view to strengthening self-confidence in the masses, is essential. In place of communal and regional history, cultural and social history of the country is the need of the hours. After all, history is for the welfare of man and the nation. Its potentialities should, therefore, be utilised for the good of the country.

There are many deficiencies in the methods of teaching followed by our universities. The present practice, of giving "scraps of informations" in different disciplines having little to do with the central purpose of the subject itself, and filling the minds of the students with "inert ideas", which can neither be translated into concepts nor into useful "social actions", should be discontinued as it makes the man most useless bore on God's earth. The attempt should be made to utilise the formative potentialities of science and humanities for developing national consciousness. The university education is of no use if it does not develop common culture, beliefs, values, standards of citizenship, active comradeship, political awareness and desire for peace and take full precaution against the spread of ignorance, prejudice, superstition, narrowmindedness and passivity.

The attempt to transform Indian society into a planned, secular, socialist and democratic order, the British pattern, with a social system incoherent with its political system has not achieved much success. People's aspirations have grown higher and higher with each new slogan, however, the system has remained as static as it was. The development of extra parliamentary tendencies; indulgence in self-aggrandisement; opportunistic alliance on the part of political parties, the unmindful and sleeping elite; attempts to integrate political values of capitalism, socialism, feudalism and democracy in a single polity, has created an ugly scene. Pervasive corruption, even at the highest level, nepotism, economy of black money, wide gap between profession and practice and the "political permissiveness" have aggravated the crisis. The people have lost faith in the system, the system lost its validity, and the leadership has lost its credibility. However, the deities in the temples of learning remained undisturbed, and maintained stony silence. They did not think it proper to express their considered opinion on the issues of national importance. In its own interest the academic community should come out of its isolation and guide

the nation, by co-ordinating its knowledge and expertise with the political leadership of the country. Such co-ordination is essential for removing inadequacy of the knowledge and expertise already available in the campus. But the interaction between the academic and political communities is yet to be achieved in this country. The lesson have again to be learnt from the Soviet experience.

A democratic socialist order with equal emphasis on individual freedom and social compulsion, requires certain special qualities in its citizens. The establishment of socialist society is fundamentally the development of new man. A high degree of the sense of participation in public affairs, vivic morality, self-control, commitment to ideology and social insight are some of the virtues that its members need most. The development of the individuality, in the traditional sense of the term, has no relevance to the contemporary context. In this respect, the responsibilities of the universities are quite heavy. They have to sort out the various issues that the society will have to face under this transformation. They have to find out ways of curbing the acquisitive tendencies of man and liberating his creative capacities.

The contemporary Indian society has to redefine the concept of liberty. Liberty, in the absence of the capacity for the mastery of the self, being neutral regarding values, without any restrictions, leaves one at the mercy of impulse. Man needs rational guidance, liberty alone will not be sufficient. Human beings need certain complementary virtues like reverence, tolerance and dutifulness without which more liberty degenerates into permissiveness and social indiscipline. The universities in India upto now are pursuing the values of old liberalism which believes in the art of living with all the ailments of body polotique, without making clear to society that some kind of liberty is inconsistent with the new social order in spite of the fact that at least in this country liberty is being enjoyed more than their legitimate claim by a small minority. This, however, is a sign of great social malady. But no serious attention has been paid to this fact by the Indian campuses.

In spite of constitutional provisions for the equality of educational opportunity, the rural elite, the urban people and the middle and the upper classes which form the backbone of Indian social and political structures have monopolised the educational gains which have not yet reached the people living in villages, slums, tribal communities and other sectors which live below the poverty line. In the absence of social and economic equality, as it is in the case of India, legal and political equality tend to perpetuate inequality and strengthen privileges. Higher education in India has practically become an additional subsidy to small minority of "haves" and elites in spite of the fact that the rich and the poor sit together in the same class room. The equals are undoubtedly entitled for equal treatment provided other things are equal. But in case other things are unequal, equality becomes a matter of proportion. The students coming from the disadvantaged sectors, families and areas require preferential treatment for compensating deficiencies of "nature and nurture". An effective and planned programme for the

removal of educational inequality should be worked out by the universities in collaboration with the state in order to enable the disadvantaged to get their rightful claim. The cause of injustice in fact, lies in society itself. There is pressing need for studying, understanding and finally altering the present unjust social order in India for which the lead should have come from the campus. This, however, is far from happening.

The increased facilities of education, transport, mass communication, agriculture and industry are bringing far reaching changes in the nature of rural and urban communities. The old institution and values which sustained life of these communities for generations are unable to meet the new requirements of life. However, the new ones are emerging at a very slow speed. The joint family, caste system, untouchability, social isolation and the status of women are undergoing transformation. Traditionalism is giving way to modernization which has shaken the self-respect and self-confidence of the modernised youth, in the effectiveness of his own culture, who now feels ashamed of his own social pattern of life. He has become to an extent, cut off from his own soil, in some respects, though he sticks to the traditional values in respect of others. This situation has created a conflict within the culture itself and the illiterate masses have developed a suspicion towards the educated elite. This, however, is not a healthy trend. The passage from the traditionalism to modernity should be smooth and the universities have a special role to play in this process otherwise a cultural crisis is likely to be confronted which needs to be avoided.

The society in India needs modernization of its values and ways of life. The passive and misplaced sense of tolerance in India amounting to indifference and moral cowardice, the belief in man's destiny and divine arrangement of society, the mentality of other-worldliness along with hypocritical idealization of poverty, the defective attitude towards wealth and saving, the theory of Karma (action) of previous birth as the main determinant of the course of events in this life, the attitude towards the modern age (Kaliyuga as the age of degeneration) the individualistic concept of Moksha and Atmanubhuti (salvation from bondage and self-realization) by means of Tapas and Samadhi, the theory of desirelessness leading to ascetic self-denial and the metaphysical neutrality between the good and the evil, with Sanyas (hermitage) as the ultimate stage of life falling beyond ethics, are some of the cultural constraints in the way of socialistic modernization of India. The attempt to transplant foreign cultural values or the blind imposition of the past, however, would hardly succeed despite certain people's for the reasons best known to them, remaining quite active in this direction. The university should undertake the task of reinterpretation of cultural values to meet the requirements of modern life. The Indian heritage has vigour and vitality also. It should be our endeavour to utilize them for the building of new India after making careful and considered selection.

A number of heterogeneous communities with

strong religious traditions and with the determination of maintaining their separate identity exist in Indian secular state. Hinduism with its spiritual anarchism and closed social system and Islam with its revealed creed and the universal brotherhood confined only to the believers create major problem for the polity. Secularism for us has become a policy of convenience without going deep into our mental culture. For the majority among Muslims, it is the over compensation of the sense of insecurity and for the majority among Hindus, it is hypocritical benevolence. Only a small minority has accepted secularism in its true sense. Moreover, in its attempt to remain equidistant to all religions, Indian secularism has fallen off its main track. For the state, it is only the policy of non-interference in sacred matters. The result is the perpetuation of inhuman, superstitious and obscurant practices in almost all the communities. The state is shy, if not afraid of, enacting legislations for such social reforms as are expected to touch the religious sensitivity. Even high dignitaries of the Government perform religious ceremonies when they have to inaugurate something new. Indian secularism thus, has been reduced to compound communalism.

The way to secularise the country and bring speedy modernisation for her social structure for establishing a socialist society lies in giving up the present approach. The state may allow the freedom of religious practices but it cannot afford to allow its propagation. Religion cannot be permitted to stand in the process of social reforms. The state should boldly come forward and adopt an attitude necessary for the elimination of social evils, secularise educational and stop giving assistance to religious and communal institutions at all levels. To have a Hindu, a Muslim and a Sikh University in this country is nothing but a mockery of secularism. The universities which are autonomous bodies could take a lead in this matter by bringing radical changes in their curricular activities and working system. However, their own house is not in order. In the absence of non-religious and scientific culture and secular morality which our education has failed to develop in the country, communalism would remain prevalent in some form, open or disguised. The university in India should try to develop scientific attitude among its graduates, as the attempt to make an intellectual synthesis between various creeds has failed. The warning of history should be properly understood.

The development of scientific habit of mind, the forming of opinion after examining the evidences without bias, is an essential function of the higher education in country where superstition, fanaticism, obscurantism and prejudices have taken deep roots in national life. The universities, in this country, are imparting scientific knowledge without inculcating the scientific habit of mind, and science has not been able to affect the mental culture of Indian youths. The result is that the scientific knowledge and superstition are simultaneously affecting our culture producing worst types of contradictions. Many of our national evils which are persisting since long would disappear if this attitude is developed. The

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Different Aspects of Paper Setting in a New Teachers Course

A. K. Gupta*

Follow up studies of examinations are almost non-existent in our country. This is especially true in the case of examinations for various courses conducted by Universities, Boards and other official bodies which are expected to be of "Good" or "High" standard by public at large even though many research studies have doubted their reliability, validity and sanctity.

The present paper reports the results of a follow-up study conducted at Model Institute of Education and Research, Jammu. The Institute has been conducting since 1975, a teacher education programme known as 'Post-Graduate Diploma in Education' which has been described as an innovation in the field by experts. The salient features of the course outlined by the Institute reveal that the P.G. Dip. Ed. Course has a very modern curriculum. It is highly research oriented and efforts have been made to evolve a new technology for correspondence education based on open-ended assignments and short answer questions. Since the Institute acts both as an examining and a certifying agency, a study of the standard of examinations on which no external evidence was available till now, was considered essential.

The need for eliciting external evidence was also necessitated because of two major reasons. Firstly, with the explosion of knowledge on one hand and with a constant expansion in the sphere of work opportunities on the other, the educational world is today witnessing a mushroom growth of educational courses offered by various agencies and centres of learning. It is, therefore, important to clear the doubts of prospective candidates and their well-wishers regarding the value and standard of the newly offered course. Secondly, innovations introduced in the field of higher education are doomed to die a premature death unless these are followed up and evaluated scientifically. Not only this, most promising of these should be brought to the notice of the academic world and officials so that patronage may be provided to them well in time.

Methodology

The present study happened to be a follow-up study of the paper setters appointed by the Institute to set papers for the final examination of the Post-graduate Diploma in Education Course (P.G. Dip. Ed. session 1975-76: first session). The twenty-one paper setters belonged to fourteen universities and research institutes of India and included eight paper setters of the rank of Professor or equivalent. Nine paper setters were of the rank of Reader or equivalent while four were senior lecturers. All the paper setters had been approved examiners/paper setters for B.Ed./M.Ed. of more than one universities.

A sixteen item multiple choice opinionnaire was

specially prepared to elicit their responses on the various aspects of paper setting. This opinionnaire was mailed to the paper setters. As many as nineteen paper setters responded (while two senior lecturers could not do so).

Results

The results are given below. The percentage of responses obtained in the case of each item have been shown in parentheses.

No.

Statement

1. The paper which I set for the Final Examination of P.G. Dip. Ed. course was of the standard of:
 - a) B.Ed. of Indian Universities (31.5 %)
 - b) Higher than B.Ed. (63.15%)
 - c) Lower than B.Ed. (0 %)
 - d) M.A. (Ed.)/M.Ed. (5.26 %)
2. The course content from which I set the paper was:
 - a) Very Modern (47.36%)
 - b) Modern (52.63%)
 - c) Traditional (0 %)
 - d) Very Traditional (0 %)
3. The utility of subject matter of the paper is:
 - a) Present oriented (0 %)
 - b) Future oriented (0 %)
 - c) It is equally important for the present as well as for the future (100 %)
4. The course content of the paper which I set for the Final Examination of P.G. Dip. Ed. Course was of the standard of:
 - a) B.Ed./B.T/L.T (36.84%)
 - b) Higher than B.Ed. (57.89 %)
 - c) Lower than B.Ed. (0 %)
 - d) M.Ed/M.A. (Ed.) level (5.26%)
5. For the examination of 3 hours duration the maximum number of short answer type questions to be answered was seven. Should this number be:
 - a) Reduced (5.26%)
 - b) Kept same (42.10%)
 - c) Increased (52.63%)
6. I found the course content from which I set question paper as:
 - (a) Very Comprehensive (42.10%)
 - (b) Comprehensive (36.84%)
 - (c) Just adequate (21.05%)
 - (d) Inadequate (0 %)
7. The directions for paper setting given to me were:
 - (a) Very Comprehensive (15.78%)
 - (b) Comprehensive (68.42%)
 - (c) Just adequate (15.78 %)
 - (d) Inadequate (0 %)
8. I found the setting of this paper in comparison to other similar courses as:
 - (a) Very difficult (0 %)
 - (b) Difficult (73.68%)
 - (c) Same standard (10.52%)
 - (d) Less difficult (15.78%)
9. I was asked to set two papers at a time and I

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think that it is better to ask the paper setter of a particular subject to set at a time:

- | | |
|------------------|----------|
| (a) One paper | (36.84%) |
| (b) Two papers | (47.36%) |
| (c) Three papers | (0%) |
| (d) Doubtful | (15.78%) |
10. The remuneration I got for setting this paper in comparison to the paper setting remuneration of other Institutions is:
- | | |
|----------|----------|
| (a) More | (0%) |
| (b) Same | (89.47%) |
| (c) Less | (10.52%) |
11. The time given to me for setting the paper was:
- | | |
|--------------------------|----------|
| (a) More than Sufficient | (5.26%) |
| (b) Sufficient | (84.21%) |
| (c) Average | (10.52%) |
| (d) Insufficient | (0%) |
12. While I was setting the paper, I visualised the candidate's basic qualifications as:
- | | |
|------------------|----------|
| (a) Graduate | (52.63%) |
| (b) Postgraduate | (47.36%) |
| (c) Any other | (0%) |
13. The quality of instructions given to me for setting paper was:
- | | |
|---|----------|
| (a) Similar to the instructions received from other Institutions/Universities | (42.10%) |
| (b) Inferior than the instructions from other Institutions/Universities | (0%) |
| (c) Better than instructions received from other institutions. | (57.89%) |
14. If an average student studying in B.Ed. class were asked to appear in the paper set by me, he would have secured.
- | | |
|--------------------|----------|
| (a) High Grades | (0%) |
| (b) Average Grades | (42.10%) |
| (c) Lower Grades | (57.89%) |
15. The mode of the payment of remuneration was:
- | | |
|-----------------|----------|
| (a) Very prompt | (68.42%) |
| (b) Prompt | (31.57%) |
| (c) Late | (0%) |
| (d) Very Late | (0%) |
16. I have come across with such follow-up studies of paper setting in other universities.
- | | |
|------------------|----------|
| (a) Always | (0%) |
| (b) Occasionally | (0%) |
| (c) Rarely | (10.52%) |
| (d) Never | (89.47%) |

Conclusions

In the light of above results the following conclusions based on the modal value of the percentage of responses may be crystalised.

1. Standard of Paper

The standard of the P.G. Dip. Ed. papers is higher than the B.Ed. of Indian Universities.

2. Course Content

The course content prescribed for the P.G. Dip. Ed. Course is modern.

3. Utility of the Course Content

P.G. Dip. Ed. Course content is equally important for the present as well as future as per its utility.

4. Standard of Course Content

The course content for the P.G. Dip. Ed. Course is of a standard which is higher than the B.Ed. of Indian Universities.

5. Number of Questions to be attempted in a Paper

The number of questions to be answered in the examination in a paper should be increased from their present number (seven).

6. Comprehensiveness of Course Content

The paper setters in general found the course content from which they set papers as very comprehensive.

7. Directions for Paper Setting

The paper setters found the directions for paper setting as "Comprehensive".

8. Ease in Paper Setting

The paper setters found setting of the question paper for P.G. Dip. Ed. Course as compared to paper setting in similar course as "difficult".

9. Number of Question Papers

The paper setters felt that the number of papers to be set by them should remain the same (two).

10. Remuneration

The remuneration received by the paper setters for P.G. Dip. Ed. Course in comparison to the paper setting remuneration of other institutions was the same.

11. Time Period for Paper Setting

The paper setters described the time period allowed to them for paper setting as "sufficient".

12. Basic Qualification of Examinees

The basic qualification of the candidates for whom papers had been set was "GRADUATE" as visualised by the paper setters.

13. Quality of Instructions for Paper Setting

The paper setters felt that the quality of instructions for paper setting supplied to them (in the case of P.G. Dip. Ed. Papers) was better than such instructions received from the other institutions.

14. Equivalent Grades

According to the paper setters, if an average B.Ed. of Indian universities were to attempt the paper set by them for P.G. Dip. Ed. Course, he would have secured lower grades.

15. Mode of Payment

The mode of payment of the remuneration to paper setters was described by them as 'Very prompt'.

16. Comparable Studies

According to the paper setters they had "never" come across with similar follow-up studies of paper setting by other universities.

Epilogue

The above results provide a convincing external evidence on the superiority of P.G. Dip. Ed. Course as compared to the B.Ed. of Indian Universities. Not only do the paper setters speak highly of the course content and of the standard of the papers, but also commend the directions for paper setting, the short question/answer approach in the examination, as well. The results obtained have corroborated to a large extent, the claims of the Institute regarding the Course and justify its continuation as an innovation with a promise in the field of teacher education—something which ought to attract official patronage and assistance on much wider scale before long. Lastly, the fact that the paper setters had rarely or never come across similar studies should serve as an eye-opener

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English Literary Research

S. M. Chanda*

The new University Grants Commission scales which have been introduced with a laudable purpose—to attract really bright and earnest people to the teaching profession—have given rise to some disturbing tendencies in the world of our universities. That better scales of pay will be an inducement for qualified people to go in for education as a career is no doubt a good idea. To ensure a higher standard of competence, the UGC scheme requires teachers more or less at all levels to be people with research degrees. Up to this point it is all right. But trouble arises when the UGC scheme stipulates that university lecturers will not be entitled to increments if they do not qualify for research degree within a period of five years. Insistence of research degrees even for the purpose of annual increments will naturally incline teachers more and more to attach a sort of commercial importance to research, to treat research not as a disinterested pursuit of knowledge but as a formality to be complied with so as to cross a bar on the pay scale. It will encourage, not scholarly ventures or serious inquiries, but only seemingly academic exercises. Not all teachers are research-minded or have the necessary tenacity for such work and many of those who are temperamentally averse to it will now try to produce somehow, in the shortest possible time, such matter, with a profusion of quotations and footnotes, formidable in bulk, as may be passed off as doctoral dissertations. That this craze is at work becomes clear from a study of the topics on which research work has been started in recent months. The subject of research for a teacher of English at a particular university is, believe it or not, "Nirad Chaudhuri: his attitude and style". I don't want to discuss here Nirad Chaudhuri's merit as a writer, but what staggers me is that one seriously thinks of building up a Ph.D. thesis on this topic. There are, again, a good many young teachers who are planning to offer theses in English on Indian authors writing in their regional languages. This appears to me anomalous.

There is nothing wrong with a book in English on an author whose medium is some Indian language or on a literary movement is some zonal literature of India. Maybe there is an intelligent reading public for it. Indian authors of stature such as Tagore, Sarat Chatterjee and Buddhadev Bose have numerous readers among non-Bengalis in this country and also abroad. Such intelligent readers need and should be provided more and more with books written in English on Indian literature. But dissertations in English on Indian literature are an altogether proposition.

In many cases Indian scholars' doctorates obtained by means of dissertations on Indian zonal literatures are used as qualifications in support of their candidature for English teaching posts in universities. This happens with not only candidates for junior posts, lectureships, but also with aspirants for professorships. I know of a scholar who has been recently appointed a University Professor of English in con-

sideration of his Ph. D. His doctoral work is commendable no doubt, but it is a thesis done on Gujarati poetry and has no bearing, even peripherally, on English literature.

It is in such meretricious work, research of doubtful relevance, that a number of our young college and university teachers are engaging themselves, and unfortunately it is a situation created to some extent by the new UGC scales and their requirements. "Dissertation or done for"—is now the slogan for teacher with the inevitable result that teaching proper, for which teachers are appointed, is being given the goby.

It is time for our educational planners to realize that research, however, important from the academic angle, does not necessarily help teaching in the classroom. Teaching and research are altogether different kinds of work, requiring different kinds of approach, their objectives and methods having little in common. A good research worker may—and often does—cut a sorry figure and a brilliant teacher may not have any original findings to offer. There are examples in this country of eminent teachers who could hold their classes spell-bound but did not contribute in any way to research activity. We need to remember the students' requirement; what is most important from their angle is a teacher's teaching skill, his ability to present his matter, within the limits of available time, in a persuasive way, not his glamorous doctorate degree. Unfortunately the tendency of most Selection Committees recommending persons for teaching posts is to dwell on the quantity and quality of candidates' publications without trying to assess their teaching ability. □

Higher Education and Contemporary Indian Society

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students would acquire a number of moral social virtues like open-mindedness, intellectual honesty, co-operativeness, impartiality, sense of justice and love for truth. The desirability of these qualities, from the social point of view, is self-evident.

To remain outside the active and partisan politics, to avoid excessive involvement in the day today life of the community, the disinterested pursuit of knowledge and a certain degree of detachment is essential for the health of academics. But academic impartiality and objectivity cannot be confused with social neutrality and insensibility. In the absence of social commitment and responsibility the academic community can become rootless, confused, and bewildered because its knowledge remains divorced from action. The universities should, therefore, use their knowledge and expertise for the welfare of society. □

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for universities and other examining and controlling agencies. It is strongly suggested that similar investigations shall be initiated in the field of higher education so that quality control should be enforced—something which is more or less absent in our educational evaluation. □

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Role of Pantnagar Farm Varsity

K. G. Gollakota

The Govind Ballabh Pant University of Agriculture and Technology established in 1960 is the first agricultural university of the country. It has come to enjoy the highest status and record of service among the farm universities in India.

The university has three well-established research centres viz. Crop Research Centre, Horticultural Research Centre and Livestock Research Centre and six constituent colleges namely College of Agriculture, College of Veterinary Sciences, College of Technology, College of Basic Sciences and Humanities, College of Post-Graduate Studies and College of Home Science.

The university has adopted a novel system of education involving fusion of teaching research and extension—the three tenets for an integrated approach to farm improvement.

The area of the activities of the university during last 17 years has increased manifold. With the initial enrolment of 250 students in 1960-61 the total enrolment has steadily risen to about 2,200 in 1977-78. The main emphasis has been on the improvement in quality of teaching—both in theory as well as in practice.

The university has 220 instructional days in a year which no other university in the country, has at present.

The admissions to this university are open to the students of all states and are done on merit alone. The university believes in the dignity of labour and therefore runs practical crop production, practical forage production and practical poultry production programmes.

The students are earning Rs. 150 to Rs. 200 per month under these programmes and thus providing a financial relief to their guardians.

A reference to the Practical Crop Production Programme of Pantnagar was made at the press conference of the Vice-Chancellors in July 1976 and it was enjoined that such programmes should be run in other agricultural universities.

New Technology

The university is running a number of schemes for rural development through dissemination of new technology. A strong extension service is being run which covers 19 districts of Uttar Pradesh. The team of the university extension workers posted in different districts conduct demonstrations on farmers fields to make the new techniques of agricultural production popular among farmers. Under the National Social Service which is a 3 credit programme, undergraduate students take up different agricultural works in the neighbouring villages.

Technology is changing very fast. The university feels that new fruits of research should therefore reach

the farmers in shortest possible time. Keeping these facts in view the university organises All-India Farmers' Fair (Kisan Mela) twice a year in Rabi and Kharif seasons. These fairs are quite popular with the farmers which attract thousands of farmers from different parts of the country.

The university has established Farmers' Clubs in different districts to provide a liaison between the university and farmers. These clubs now cover the entire extension area of the university. For the farmers residing in remote rural areas, the university runs correspondence course in agriculture.

The university organises training programmes in agriculture for different categories of personnels. These include administrative and extension staff not only from different departments of Uttar Pradesh but other states also.

The university has the credit to train the personnel from the neighbouring countries like Nepal, Sri Lanka and Bangladesh as well.

New Projects

In Uttar Pradesh, the hill districts represent an agro-climatic environment which is radically different from that obtaining in plains and Tarai and therefore, the biological material and production technology developed in plains and Tarai are not, in every case transferable for conditions in hills. Therefore, the university has established its new campus at Ranichapuri situated at an altitude of 4500-7000ft in Tehri district. The university runs two courses each year—first in kharif and second in rabi seasons.

A new programme of reclaiming and using the weed infested marshy, waste spots for composite fish culture is the latest addition to our projects. The experiments conducted at Pantnagar regarding composite fish culture using Indian major carps and exotic carps have given a record production of about 5000kg per hectare per year.

Integrated rural development, no doubt is the next step in the around development of our villages. In this direction too, the agriculture universities have to take a lead. Initial work has already been started by the Pantnagar University in this direction. It has successfully run a pilot project on integrated rural development in Kumaon hills in the Bhikhiasen block of Almora district which has set an example for other agriculture universities. The project has provided a new outlook, a new enthusiasm and a new life to the rural community. Now the university is going to undertake one more project in Tehri district situated in hill region of Uttar Pradesh. The new responsibility of integrated development to agricultural universities will speed up the pace of progress which will ultimately bring rural prosperity and help to generate more employment opportunities in the rural areas. □

Crisis in Educational System

The educational system is under great strain and appears to falter in resolving its many dilemmas, but it would be wrong to write off its products as of little or no value. For all its inadequacies this very system has produced scholars and statesmen, scientists and technologists, and critics—including those who are so vociferous today in denouncing the futility of the educational endeavour. I am sure that many of you, in the years to come, will distinguish yourself in different walks of life, in varied fields of thought and action. Even the most celebrated academies are not known to have produced only geniuses on their assembly lines and some of the most creative leadership in

despised system has continued to flourish. The alternatives have either languished and lingered somehow or for sheer survival they have sought incorporation in the very system they were designed to replace.

Some of the crises that the educational system is facing today are inherent in its size, structure, and management. Given the will, bold initiatives and innovations geared to the rectification of its ills can produce results. But the difficulty is that courageous declarations of intent collapse in the face of popular demands and political exigencies. It is amazing that those who ridicule the system and miss no opportunity to chastise the students as well as

a self-controlling organism; it is vulnerable, in a variety of ways and at many stages, to outside pressures. Innovative departures represented by some newly set up special purpose universities and institutes of higher learning are commendable, but it would be premature to rate them as true pace-setters. The costs involved in setting up these high-prestige institutions are so heavy that one cannot visualize their replacing the more conventional institutions in the foreseeable future. Secondly, they too do not seem immune to the viruses that afflict the traditional institutions. Some of them are already showing signs of wear and tear and are affected by the maladies of the older institutions. These problems cannot be wished away; though difficult, they are not intractable. What is important is to realize that they follow and do not precede more demanding issues implicit in the definition of the broader social objectives of education.

The contemporary educational system is criticized, and I think not without justification, for its elitism. Its products, in a considerable measure, do get alienated from manual labour and also from the masses in general. The shreds and patches of information that it offers do not relate directly to the society and its problems, but for the country's contemporary predicament it would be unfair to blame the educational system alone.

Education is a part of the larger social system. It is conditioned by the social ethos and by the powerful political and economic currents operating in the society. The shaping of young minds is not exclusively the function of the formal educational system. The family, peer groups, the community, the mass media, and the general cultural climate also contribute significantly to the process. The educational system has often to swim against the tide; invariably the prevailing idiom triumphs. Education is left with the poor consolation that it did all it could to promote some cherished ideals, which failed to make an impact however as powerful winds were blowing against them. In a

CONVOCATION

the realms both of reflection and action has come from the products of relatively unknown institutions. Young universities like yours, not weighed down by hoary traditions, have an advantage in the sense that they have greater freedom and scope to experiment and to innovate. It is my hope that in the foreseeable future some of the graduates of this group will add lustre to their alma mater and win for Marathwada University a place of honour and distinction in the academic world.

For half a century and more the Indian educational system has been subjected to relentless criticism. It is incredible but true that despite all criticism the much

the teachers, readily agree to lay the foundation stones of new educational institutions and to inaugurate them with great fanfare. Quantitative expansion is more visible and eye-catching than quiet consolidation of standards and the quest for quality and excellence. Little thought appears to be given to the structural incompatibilities, disharmonies and disincentives that are so characteristic of our educational structure. Tinkering with parts is attempted, but this cannot reform the whole. In any case, these half-hearted measures cannot remedy the situation because they fail to take account of the extra-academic and the non-academic factors and forces that shape and control academic structures. Even the most sophisticated management guidance is unyielding because education is not

Excerpts from the convocation address of Shri S. K. Dube, delivered at Marathwada University, Aurangabad.

society whose reward system prizes material possessions and encourages consumerism, the emphases on austerity and self-denial notwithstanding, the educational system can at best create only an awareness of the need for a social ethic. Where the tenor of life is highly competitive, the educational system cannot really be expected to promote successfully the ideal of cooperation and harmony. When moral values are so distorted that self invariably gets placed before society, it would be unrealistic to expect education to produce the miracle of a genuine societal orientation. The elite has demonstrated a peculiar ambivalence to the educational system; the gap between its profession and practice is conspicuously wide. The thin upper crust of society has shown little inclination to set an example by resisting the temptation of sending its own children to the privileged schools and putting them instead in the stream which they recommend for the country as a whole with great eloquence and rhetoric. The structure of economic opportunities and the norms governing the distribution of power and patronage are such that many of the prized positions in society go mostly to the products of institutions representing privilege. The existence of two parallel systems—one for the haves and another for the have nots—creates problems. What is offered to the masses cannot gain either credibility or social legitimacy. Upwardly mobile groups look to the trend-setters in the elite and aspire for access to the latter's advantages. This explains why nationalist institutions, set up during the height of the freedom movement, passionately strive to attain formal university status and why institutes of rural higher education languish. Until the citadels of power and privilege are demolished, it is most unlikely that there will be any significant change in the pattern of education. Nevertheless efforts from within have to be made to revitalize the system and to restore to it as much purpose as we can within the constraints of the politico-economic order.

I think two reforms in the edu-

cational system are urgently needed: for both only minimal outside help will be needed. But both will make heavy demands on the imagination, resourcefulness, creativity, and the sense of social purpose of the academic community itself. Much of our educational endeavour is turning into a dull and somewhat purposeless routine. That is why our students are disenchanted and at least a section of the teaching community is turning cynical. The obsolescence of the system is alarming and it is being increasingly detached from the vital contexts of contemporary life. If we recognize this situation and start responding creatively to it, I think, we shall have taken a major step forward. Innovations in this direction will require some financial outlays but their magnitude need not be such as to render them beyond the resources of a poor country. The basic input, in any case, will be our own commitment and desire to improve things.

First and foremost, education has to re-dedicate itself to the cultivation of knowledge. This is its primary function. Knowledge, in this context, has not to be viewed as a complete and bounded system which can be attractively packaged and offered in different measures to those who pass through the portals of the institution of higher learning. The system must allow for transmission of existing knowledge as well as for its growth in desired directions. Alongside this intrinsic function, at no point can we afford to lose sight of its instrumental functions—those of sharpening problem-solving capabilities so as to equip the younger generation to cope with the tangled problems of the world in which they live. Our academic system appears to have become the prisoner of a pattern. So far the pattern has succeeded in defeating all innovation and reform. A radical restructuring of our curricula needs to be pursued in a determined manner. The first degree programme can be altered to incorporate three distinct elements. The first of these elements should be devoted to the cultivation of some basic skills and essential awareness. Pedagogic and technological

innovations are needed to impart skills in two major areas—communication and mathematical reasoning. Every university graduate should have adequate competence both in speech and writing. In the years to come a developed capacity for mathematical reasoning, I feel, will be a pre-condition to the pursuit of nearly all significant branches of learning. At the same time, no student of science technology can do without an understanding of the contemporary social situation and problems and no student of the arts—the humanities and the social sciences—should be left unacquainted with the impact of science on society. An understanding of the kind of future which mankind may have to encounter, if it fails to intervene meaningfully in the process of history, should also be an essential part of the awareness content of education. The second part, which I shall call the specialization component, should be devoted to the in-depth study of an academic speciality. Here also a discipline should not be viewed as a rigidly bounded system. Around the major field of specialization, essential and relevant insights from cognate disciplines should be brought in. The core courses as well as the ancillary courses should be so drawn as to constitute a meaningful and organic whole. To these we shall have to add a third essential component—problem-solving. This part should be aimed at imparting a practical orientation—translation of theory to an action idiom. All this is by no means a tall order: it can be done.

Let me refer to one more item on the educational agenda for the future. The need for compulsory community service by the students has been emphasized for over two decades. It has been a recurrent theme in all discussions on educational reforms; it finds predominant mention in the recommendations of major commissions, committees, working groups, and seminars on education. Political leaders rarely miss an opportunity to exhort students to go to the villages to serve the people. But so far, in this respect, we have produced more words than action. Platitudinous advice, given in

solemn words, is befittingly heard with mock seriousness. There the thing rests, until there is occasion to repeat the performance. Let me not be misunderstood. I do not wish, in any sense, to be little the importance and desirability of involving the younger generation in the welfare and development of the community. My scepticism flows from the uneasy feeling that the concept of community service has become a cliché. As of now we neither have a viable plan of action nor do we have variable strategies for different parts of the country and for different sections of population representing different community needs. I have no doubt that our younger generation is not devoid of idealism. But I do have serious misgivings about our capacity to mobilize it for meaningful and sustained work in this field. Youth power in the country has a tremendous potential; it has convincingly demonstrated that it can shake the very foundations of the social order and even change a well-entrenched government. But I wonder if today it is ready to take upon itself constructive roles in the tasks of national reconstruction. Purposive community service would involve creation of a disciplined corps of students, a well spelled out programme, necessary training to the leaders as well as the cadres, and assurance of essential technical guidance and material support. There is no evidence of the existence of such blueprints. To divert the youth from the ethic of power to the ethic of service, a major mobilization effort and some extremely perceptive and pragmatic planning will be required. Perhaps a beginning could be made by the involvement of the youth in a national programme of intensive citizenship education of the people. The strategies of such a programme will have to be so devised that student participation, while rendering tangible service to the people, also becomes a definite learning experience. Their endeavours should benefit the community and at the same time impart a sense of realism to the academic knowledge they acquire in formal instruction. Not much remains to be said on the subject, what we need to do now is to

get down to business. History will judge us not so much by the quality of our reflection as by the results of our action. I am convinced that in this arena the people's power—*lokshakti*—has a much bigger role than the power of the state—*rajshakti*. A major initiative has to come from the youth.

I can go on and on in this vein, but I must stop at this point. At this critical juncture in human history rethinking the goals and philosophy of education is imperative for mankind is facing an uncertain and difficult future. Towards redesigning alternative patterns of living education will have to respond creatively to many unprecedented challenges. We do need deep reflection, but it has to be supported by purposive action. Those of us who have had the benefit of receiving higher education at the cost of the community have a special role to play. Unless we work resolutely towards the enlargement of social consciousness and come up with viable plans of action for survival, our species, I am afraid, is doomed. There is no cause for immediate alarm, but time is running out.

May I congratulate once again all those who have received their degrees today. A special status has been bestowed on them; I hope they will remember that it carries with it some special responsibilities.

Industrial rubbers, polymers and waxes developed

Indian scientists have developed technologies to produce a wide range of industrial rubbers, polymers and waxes which have been imported so far.

Some of these technologies are ready for commercial utilization and promise to save considerable foreign exchange once put to commercial use.

The National Chemical Laboratory, Poona has developed polysulfide rubbers which have outstanding resistance to wear and tear due to fuel, ozone and wea-

ther. These rubbers find use in the manufacture of aircraft, marine and automobile industries.

Another rubber known as Sulfochlorinated polyethylene (SCPE) has been developed at the Laboratory with outstanding resistance to weather and abrasion. It can be used for high temperature gaskets, hoses, shoe soles. Technology for the manufacture of cellulose butyrate (CAB) has also been developed by NCL. It is an essential component for the manufacture of fountain pens. At present, the country's entire requirement of CAB is met through imports. The utilization of this NCL technology will not only save foreign exchange but will also give fillip to fountain pen manufacture in the country.

In another experiment, the laboratory has successfully produced rigid urethane foam for use in refrigeration, transportation and as a substitute to wood in furniture.

The Indian Institution of Petroleum, Dehra Dun has for the first time in the country produced microcrystalline wax for use in electrical insulation and for paper and leather treatment.

The wax is now being exported by the Oil and Natural Gas Commission. Orders for export of this microwax has been secured from UK, Germany and Japan. The process developed by the IIP scientists makes use of a waste product in the production and pumping of crude oil.

PANJAB UNIVERSITY Advertisement No. 34/77

The Vice-Chancellor will be pleased to correspond with eminent scholars of Punjabi Language, possessing proficiency in Hindi Language and Literature for appointment as Guru Ravi Dass Professor. The post will be in the pay-scale of Rs. 1500-2500 with other ancillary benefits.

Those interested are required to write to the Vice-Chancellor along with their bio-data and a list of their publications by December 31, 1977.

All India Symposium on Floristic Studies

(From Our Special Correspondent)

An all-India symposium on Floristic studies was held at the Botanical Gardens, Howrah on November 16, 1977. It was organised by the Botanical Survey of India and inaugurated by the Head of the Department of Botany, Calcutta University, Prof. A. K. Sharma. Prof. Sharma in his inaugural address said that although eighty per cent of the world's flora grew in the tropical region, it still remained "unexploited" to a great extent. He called for more botanical research, and described Eastern India as an ideal place for this. He also laid emphasis on measures to conserve rare species of flora.

Mr. S. K. Jain, Joint-Director of the Botanical Survey of India, referred to the scarcity of trained

Ministry of Defence. Dr. S. K. Mukherjee, Vice-Chancellor of the Calcutta University said that the hospital has been recognised by the University of Calcutta, as a centre for postgraduate studies in orthopaedics and also for training house surgeons. The week-long seminar, inaugurated by the Vice-Chancellor, Calcutta University was attended by more than sixty delegates, besides eminent Calcutta Surgeons, specialised in orthopaedics and plastic surgery.

Regional councils for undergraduate studies recommended

The Committee set up by Calcutta University's Syndicate to work out specific schemes for de-

the council for professional courses.

Of the eight regional councils, three would be in Calcutta. The others would be at Kalyani, Jadavpur and Burdwan. For colleges situated at Midnapore district, a separate regional council has been suggested till a university is set up there. The eighth council would be located at Agartala, with jurisdiction over colleges in Tripura.

The committee agreed with the recommendations of the Ghani Committee set up by the U. G. C. on reconstructing the university and suggested that Syndicate be responsible for ensuring coordination among the councils and uniformity of standards.

The West Bengal Government has agreed to allot about 19 acres of land in Salt Lake Sector III to Calcutta University at a subsidised rate for building a new complex.

The Government has also agreed to allot about 6 acres of land in Sector I of the township for building teachers' quarters.

Farm University Review Team visits Rajendra Agricultural University

ICAR Agricultural University Review Team under the chairmanship of Dr. M.S. Randhawa, former V.C., Punjab Agricultural University is visiting every state by the end of November to find out how far these universities have met the objective of producing non-elite graduates capable of self employment on to serve the farmers to transfer quickly the latest farm technology more effectively. It will also advise the universities how to bring about rural orientation in home science colleges so as to serve farm women who contribute 40 percent of total energy required in agriculture in India. Recently, this team of eminent agricultural scientists, educationists including ladies visited four eastern states of India namely Bengal, Assam, Orissa and Bihar from October 31 to November 5. The team visited agriculture and veterinary colleges at Kanke on 4th and 5th November.

CAMPUS NEWS

field and herbarium botanists and said that although there was no organised programme to train young taxonomists, many scientists had acquired expertise comparable to international standards. In the U. S. A. and Soviet Union, indigenous drugs were being made from herbs and the same could be done in India, he added. He said, the largest botanical garden in India would be opened in Port Blair.

Calcutta new centre for orthopaedics

An artificial limb centre has been set up in the Eastern Railway's Orthopaedic Hospital, Howrah in collaboration with the

centralisation of undergraduate studies and examinations has recommended eight autonomous regional councils for the university's one hundred and seventy-five affiliated colleges. The committee has suggested that while the Syndicate should have matters relating to courses of studies, selection of textbooks, fixation of fees and moderation of question papers, the regional councils should be responsible for the administration of undergraduate studies and examinations in arts, science and commerce. Separate councils have been suggested for medical, engineering and other professional courses. Law, education and library science would come under the jurisdiction of

Prominent members were: Dr. D.N. Sharma, former V.C., Patna University and Chairman, Bihar Granth Academy; Dr. M.R. Dhanda, former Director IARI and Director, Animal Science Division, Commonwealth Agricultural Bureaux, London; Dr. J.B. Chitamber, Principal, Agricultural Institute, Allahabad and former member UGC. Prof. S.K. Mukerji, former V.C. and Assistant Director General (Agriculture Education) accompanied the team during their visit to eastern region. The team held discussions with staff and student representatives. They were agreeably surprised to learn from the students that English should be the medium of education for higher education particularly at post-graduate stage. The team had the same experience where the students lamented that they have to study textbooks in highly sanskritised Gujarati which they do not understand and English has been banished from the university. As a result for last four years no Gujarati student has competed in examination conducted by ICAR for junior fellowship and for Agricultural Research Service. The business firms mentioned in their advertisements that candidates from Gujarat Universities need not apply. The team felt that there is an urgent need to teach English as a library language in every university for those who secure admission for higher education as in non-English European countries.

The introduction of animal unit in Ranchi Veterinary, College for the first time in 1974 to teach animal production by learning by doing and attaching 100 patients per day was the highlight of the visit. The newly adopted earn while you learn and crop production course and training courses for literate farmers in both the colleges was highly appreciated. Recently, Mr. B. Shivaraman, Member Agriculture, Planning Commission visited the campus in November and has suggested to the Bihar Government that in addition to Kanke two more blocks be attached to the Kanke campus of Rajendra Agricultural University to hasten

the transfer of new farm technology like dry farming techniques, bacterial fertilizers, application of line and spread of "gall fly" resistant paddy varieties selected at the local campus research station.

Radio lesson workshop

Stressing the importance of radio as a medium of correspondence education, Prof. R.C. Paul, Vice-Chancellor, Panjab University, said that radio talks with their stress on personalised approach to the subject delivered by a teacher himself, fill the gap left unbridged by the impersonal lesson.

He was inaugurating a 2-day radio lesson workshop on October 12 jointly organised by the Correspondence Courses, Directorates of Panjab and Punjabi Universities with the collaboration of the Jullundur Station of All India Radio.

Mr. Qaisar Qalandar, Station Director, AIR, Jullundur, in his key-note address spelled out the four-point instruction for model radio talks stressing simplicity of language, use of short sentences with suitable pauses, unity of theme and repetition of the central idea.

Major Jiwan Tewari, Director, Correspondence Courses, Panjab University, observed that about one lakh distant students had been benefited from the series of the university broadcasts through AIR, Jullundur.

Commonwealth Information Guide

A reference guide to education and training resources available in developing countries of the Commonwealth has been published by the Commonwealth Secretariat. It is a revised and enlarged edition of a similar directory published in 1974, and provides up-to-date information on post-secondary institutions and courses relevant to students from other countries.

Though not comprehensive, the Directory gives extensive coverage of facilities in some 40 Common-

wealth countries and will be of particular value to those concerned with training, whether as government training officers, principals of institutions or students.

It is arranged in three sections: the first covers nearly 300 institutions offering courses for which the entry standards are lower than those required by universities; the second lists 159 universities and other degree granting institutions; and the third includes 169 other institutions offering courses at first degree, post-graduate or other advanced levels. A number of research establishments which can accept students for training are also listed.

The purpose of this new edition is to facilitate more extensive collaboration between Commonwealth countries in the use of training facilities to produce the middle and high level manpower required for economic, and social development.

The publication can be obtained from Commonwealth Secretariat Publications, Marlborough House, Pall Mall, London, SW1Y 5HX.

Kashmir's centre of adult education

The University Grants Commission has approved the proposal of establishment of a Centre of Adult/Continuing Education at the University of Kashmir.

To start with an amount of Rs. 1.40 lakhs has been earmarked for the Centre. Following programmes are envisaged under the Centre of Adult and Continuing Education: Orientation/Refresher Courses for College/School teachers; Orientation-cum-training programmes for the extension workers of the Department of Community Development; Training programmes for Fishermen for fish canning and for Farmers; Extension lectures for faculty wives; Medical extension programme for the University Community; Leadership programmes for N.S.S. volunteers; Orientation courses for kitchen gardening, Secretarial practice, Book-keeping & Accountancy; A

preparatory course for I.A.S. and other competitive examinations; Lecture programme for general enlightenment of people on subjects like the rights and obligations of citizenship, problems of contemporary world law for the laymen, etc.; A course on nutrition and child care, First aid, Fruit preservation and Mushroom cultivation.

World Bank team visits PAU

A World Bank Team consisting of three experts—an irrigation engineer, an agronomist and an economist accompanied by the irrigation experts of the State Department of Irrigation, the Punjab Tube-well Corporation, had a fact-finding appraisal of various studies carried out by the Punjab Agricultural University experts on a number of aspects of crop rotations, cropping intensities, marketable surpluses, marketing patterns and scope of increasing agricultural production in the State. Based on their previous meeting of September 28 and 29, they had with the university experts, they got clarifications on various points of doubt. Round of discussion was held with the University economists, agronomists and soil & water management engineers under the chairmanship of Dr A. S. Kahlon, Dean, College of Basic Sciences & Humanities.

World Bank is financing a major composite irrigation scheme of the Punjab State pertaining to lining of irrigation channels, distributories and flood control and drainage projects to increase and better the utilization of the existing water resources of the State.

Towards Question Banking

Forty Delhi University teachers of English met at a workshop for three days, from November 7 to November 9, 1977 to evolve ways and means of improving examinations in English Language and Literature at both the undergraduate and postgraduate levels. It

was for the first time that a serious and concerted effort was made by the Delhi University teachers of English to discuss problems of typology of items/questions, designing and balancing a question paper, and introducing objectivity in marking/evaluation.

The workshop was organised under the joint auspices of the Association of Indian Universities and the Department of English, Delhi University. Far from being a futile theoretical exercise of speeches, discussions and ceremonies of inaugurals and valedictories, as some workshops turn out to be, this workshop aimed at practical and productive work.

The tone of work was set on the first day by two distinguished scholars, Prof A. N. Kaul, Head, Department of English, Delhi University, and Prof R. N. Srivastava, Head, Department of Linguistics, Delhi University.

Multiplicity of problems posed by them evoked enthusiastic response from the participants. The participants addressed themselves to the problems, classified them under different heads, and took them up for consideration within the constraints of time.

It was indeed lucky to have Prof. V. Natarajan, Project Officer —(Exams), Association of Indian Universities, an eminent scholar, with a host of publications to his credit, as the Course Director. With a marked sincerity and exuberance he introduced the subject-free (but duly illustrated from varied subjects and disciplines) notions of objectives of learning and teaching, scientific writing of objective type items/questions, assigning weightages by objectives in the designing of a question paper, and pre-validation of items/questions.

It was only after a thorough discussion, sometimes marked by initial scepticism and resistance, that the participants arrived at the conclusion that English Language and Literature were also, like other disciplines, amenable to the specification of objectives of learning and teaching, and objective type testing. Some of the doubts about the objective

type items being capable of testing higher level abilities in language and literature were put at rest by the participants exposing themselves to an entirely Objective Type test in Critical Analysis in Reading and Writing, Educational Testing Service, Princeton. The distinguished speakers on the last day, Dr R. W. Desai and Dr C. L. Nahal, further corroborated some of these points.

Once the conviction sought had been obtained the participants engaged themselves whole-heartedly in the writing of objective type items/questions. About three hundred items/questions in different areas were produced conforming to the scientific principles enumerated and explained by Prof Natarajan. It was decided that the participants would follow up the work started at the workshop, and write lots of items/questions on prescribed texts and areas of study. A meeting to take stock of this work and discuss related problems has been proposed for 19th December, 1977.

It has been decided to collect the items/questions written by the teachers, pre-validate them and put them together as initial Question Bank to be used for field trial. The Association of Indian Universities already has a Question Banking Project in English Language and Literature, both at the undergraduate and postgraduate levels, in hand. A number of workshops have already been held at various universities in the country to initiate and involve a large number of teachers in the writing of items/questions.

The basic outcome of this workshop, as of many others held elsewhere, was the realisation of the usefulness and meaningfulness of Question Banks. Apart from clearing certain frivolous notions of a Question Bank being a mere collection of 40-50 Questions from previous years' question papers, a positive idea of deep scientific thinking not only in the writing of items/questions that go into it but also in the planning, scheduling and implementation of it was brought home to the participants. It is only by securing a conviction and an ac-

tive involvement of teachers that banking on Question Banks to usher in major reforms in the examination system, with its own impact on curriculum planning and methodology of teaching, can be made a viable proposition. The teachers of English at Delhi University have taken the first constructive step in that direction at the workshop.

The workshop played host to some eminent personalities: Prof. Sampath, Member, UPSC and Dr. Goel, UGC. They acquainted the participants with the thinking of the UPSC and the UGC on the subject. Question Banking constitutes a major component of examination reforms being proposed.

Fourth seminar of Registrars and Administrative Officers

The Fourth Administrative Development Programme, organised by the Seminar of Registrars and Administrative Officers of All-India Institutions in Science, Technology and Management, was successfully conducted at the Indian School of Mines, Dhanbad, from October 3rd to October 4th, 1977. This programme was specially designed for middle-level administrators of leading educational and research institutions and the CSIR Labs.

The three main objectives of the programme were :

(1) Required information and knowledge of the basic concepts and principles of management and modern management techniques in fields relevant to their work;

(2) Specific functional skills needed for effective institutional administration, particularly in their respective spheres; and

(3) New awareness and new attitudes on the part of middle-level personnel towards understanding of the central aims and purposes of the institutions with which they are associated and towards enlarging their competence and improving their educational contribution.

The programme was attended by seventeen participants in full from the Seminar Institutions, the CSIR Labs and the Industry,

four Registrars and Administrative Officers from the participating institutions, besides one participant from Industry attended part of the programme. The programme was given a flying start on October 4 morning by an inspiring address by Prof. G. S. Marwaha, Director, Indian School of Mines, who had evinced great interest in organising the programme at Dhanbad by providing all facilities to the seminar for this purpose. Mr. S. N. Pandey, Director (Personnel), Bharat Coking Coal Limited, delivered the valedictory address on October 14 afternoon.

The majority of the sessions of the programme were handled by the Faculty of the Administrative Staff College of India, Hyderabad, and the Indian School of Mines, Dhanbad, the Birla Institute of Technology and Science, Pilani, and the rest by the executives from Bharat Coking Coal Limited, Dhanbad and the New India Industries Ltd, Baroda. The Registrars and Administrative Officers of some of the participating institutions also acted as Resource Faculty and took part in the discussions.

Following the suggestions and recommendations made by the participants and the Resource Faculty of the earlier three ADP's and the Case Workshop, the following welcome changes were incorporated in the Fourth ADP:

The majority of sessions were case discussion sessions as the seminar has already built up more than 100 case-studies;

Role play and exercise sessions;

Special sessions on Project Management and CSIR Re-organisation and on Administrative Problems of Central Universities and the IITs and IMs;

Participation of executives from Industry as Resource Faculty and visit to the Coal Mine where the participants came face to face with the black diamond embedded in Mother Earth;

A mix of participants from various sectors—educational and Re-search institutions, CSIR Labs and Industry.

The main pedagogical tool used in the programme was the case studies developed by the seminar. The participants got heated up even on the very first day and the tempo was kept throughout the first week. The second week opened with case discussions on specific problems of administration in educational and research institutions in which the Registrars and Administrative Officers of some of the participating institutions joined. The objective was to enhance the interaction and enliven the proceedings by the participation of experienced administrators of educational and research institutions. Other pedagogical methods like role-play exercises and conceptual inputs by the Faculty were also adopted as part of the total development of the participant-administrators.

The participants clearly understood the three main objectives of the ADP. The programme has been most successful in bringing about new awareness of self, as well as of others—subordinates, peer group and superiors and also new attitudes on the part of middle-level and administrators working in educational and research institutions. The participants in their evaluation report have rated the faculty contribution as of a high order. The fourth ADP was a definite improvement over the first three ADP's in its practical and problem-oriented approach to most of the topics taken up for discussion. The participant-mix hailing from three different sectors—Education, Research and Industry—added to the richness of the discussion, exchange of ideas and experiences and enhanced the learning value of the programme. The participation of representatives from industry was in keeping with the new approaches being developed by educational/research institutions and research labs to work in close liaison with the environment and with industry.

The participants have suggested the following topics for inclusion in the next programme :

Time Management;
Project Management;
Students' Hall Management;
Estate Management;
Futurology.

They have also voted in favour of the continuation of the case method of teaching which held the prime of place in the Admn. Development Programme while conceptual inputs may be given either before or after the case discussion sessions, when necessary. The participants reinforced and complimented the organisers for keeping the main thrust of the programme as participant-oriented and problem-oriented with the Resource Faculty acting as facilitators and catalytic agents. They have also agreed to contribute a minimum of two to three cases each to the Case Development Programme of the Seminar.

With the enthusiasm created by the programme among the participants the seminar hopes to bring out the two Case Books:

Case Book on Higher Education/Research Administration;
Case Book on Collegiate Administration.

The two Case Books, which are pioneering ventures of the seminar and the first books of their kind to appear on the Indian scene, will be going to the press shortly and will be published sometime in April/May 1978. The credit for this achievement will entirely go to the participants of the four ADP's and the Case Workshop and to the Registrars and Admn Officers of the participating institutions.

The favourable response evoked by the four ADPs conducted by the seminar, among the participating institutions and the CSIR Labs and the industrial organisations, has given all members of the Co-ordinating Committee of the seminar confidence to plan our future activities so that we are able to sustain the momentum created by the solid work of the voluntary group of Registrars and Admn Officers of the participating institutions over the past ten years.

The seminar has planned the following programme in 1978:

Three-day seminars for Superintendents and Assistants in the respective institutions;

Three-day seminars for Secretaries and Personal Assistants;

Fifth Administrative Development programme for middle-level administrators in Educational/Research Institutions and Research Labs.

Seminar on Library and Education

A seminar on "Library and Education" was held at Salem recently. Mr. D. S. Arul was kind enough to direct the seminar. Mr. D. Moses, the local convenor welcomed the participants. Prof. R. Narasingham, Principal, Government Arts College, Rasipuram and Chairman of the Government Collegiate Teachers' Association delivered the key-note address.

Without library there is no education. There is no need for any Intermediary Officer between the Principal and Librarian in Colleges. Whatever be the difficulties, financial, administrative or otherwise, promotion of reading habit should be the prime concern of the Principal and the Librarian. Unless there is open access, the students cannot derive any benefit. Love of books is essential for anybody who believes in education. Librarians should devise new methods to attract the students to the library and to make them book-minded. It is the duty of the librarians to educate the students on library resources and library methods.

Dr. S. R. Ranganathan's "Five laws of Library Science" is an essential reading for all teachers and educators. The concept of library has changed. The modern library is not a mere collection of books as in the past but has become the nerve-centre of all academic activity.

The librarian should arrange for film shows on libraries through Audio-Visual Education Department. Tours of modern libraries can be arranged for the teachers and students. Some useful books may be kept in the hostel for the benefit of the hostel students. Authors of books of current interest may be requested to give lectures. Book reviews may be arranged. In order to perform all these services, the library should be provided with sufficient func-

tional space, suitable furniture, necessary equipment, and adequate qualified staff. The librarians and library staff deserve better treatment and working conditions.

Mr. K. Nellayappan in his paper on 'Library as a means of education' described the library as "active instrument of education and human development rather than passive guardian of knowledge". He added that modern trend in education is to develop a thinking individual. The library is a means for universal self-education. In academic institutions the duties and services of the librarian begin where the task of the teachers in the classroom ends. Education benefit of library service is like a body without soul. It can be concluded that from the primary stage to the highest stage, the library serves as a successful companion and if the nation's expenditure on formal education is to be utilised properly, any educational programme must be preceded by the provision of library service.

Mr. N. Ganesan, in his paper "Library and Non-Formal Education" stressed that the public libraries, should become community information centres with the social responsibility of abolishing illiteracy. It is not enough if the librarians collect, and organise library materials but they should sell their goods to the members of the public in an effective way. In fact librarianship is a sort of "salesmanship". The libraries should not wait for the readers to come but somehow attract the public and initiate them in the methods of acquiring knowledge. Public libraries should be made effective centres of self-education and continuing education. He gave some useful suggestions regarding the training of the library staff and the grading of various cadres to manage the libraries. He outlined some salient features in library education also.

Mr. K. R. Soundararajan in his paper on "Library and Education" has stressed the need for abolishing the present method of spoon feeding education and emphasised on the need for library-oriented methods of teach-

ing. The college librarians should be directed to teach the students on the library resources, methods and guide them regarding writing of theses, project reports and technical papers.

Findings of the Seminar : Two hours of library orientation per week for first year students by college librarians may be included in the framework of the college time-table; To make the students realise the importance of library habit and self study the students should be directed to maintain library diary, to be supervised by the librarian. Two hundred marks may be allotted for this purpose under the internal assessment scheme; It should be made obligatory on the part of the colleges to establish book-review clubs or readers' forums; librarians can help the students with useful books on various topics of study if the teachers inform the librarians the plan of lectures before hand.

Later in the business session, the following resolutions were passed unanimously :

"To thank the Principal, Government Arts College, Salem for granting permission to hold the seminar in the College premises.

To thank the Government of Tamil Nadu for implementing the U. G. C. scales of pay.

To request the Government of Tamil Nadu to sanction Assistant Professor's scale of pay for Grade II Librarian also.

To request the Government of Tamil Nadu to sanction Selection Grade for senior Librarians with ten years of service.

To request the Government of Tamil Nadu to transfer the College Librarians now borne under General Subordinate Service to Educational Subordinate Service.

To request the Government of Tamil Nadu to classify the College Librarians as Teaching Staff in conformity with the regulations of our universities and the provisions under the Tamil Nadu Private College Teachers' Act.

To request the Government of Tamil Nadu to appoint a High

Level Committee consisting of the three university librarians and some senior college librarians to go into the question of all aspects of college library administration.

To request the Vice-Chancellors of the Universities in Tamil Nadu: (a) To offer library science or Library Orientation under Foundation course.

To include library science as an ancillary subject of study for the degree courses; and

To provide for Library Initiation Hours—Two hours per week for the First Year Degree students to be engaged by the college librarian under the framework of the college time-table".

Cancer diagnosis by computer

The first ever indigenous computerised cancer diagnosis service in the country will be introduced in Madhya Pradesh at the Gwalior Cancer Hospital. The introduction of the computerised service would reduce the gap between the diagnosis and the commencement of the treatment of patients from the existing twenty days to twentyfour hours. Computer, India Hyderabad, has agreed to instal the computer at the hospital at a cost of Rs 12 lakhs. The expenditure will be shared equally by the Union Government and the private trust constructing the hospital.

The Gwalior hospital would be directly linked with the other three cancer hospitals in the state at Raipur, Indore and Jabalpur so that the service would be available to the patients covered by these centres also. The data on cancer would be fed by these centres to Gwalior on telex and the findings and line of treatment would be transmitted back to the particular hospital the same day so that the patients could start getting treatment the very next day.

A research laboratory for cancer by allopathic, ayurvedic and homoeopathic methods of treatment would also be attached to the Gwalior hospital which would have its own herbarium where herbs, known since ancient times to be used for treatment of cancer,

would be grown. The hospital would have a mobile unit for the detection of cancer, especially among the rural people. The entire Gwalior cancer hospital project is estimated to cost Rs 2.50 crores. The project is to be completed in three phases.

Seminar on Himalayan Geology

The Wadia Institute of Dehra Dun held a seminar on Himalayan Geology at the Centre of Advanced Study in Geology, Panjab University, Chandigarh. A large number of Indian and foreign delegates participated in the seminar. A study trip to the Kalka-Simla section of the outer Himalayas was also organised. A number of lectures and group discussions on Simla slates and their equivalents were arranged.

Five wood fossils, about 16 million years old found in the lower Siwalik beds at Kalagarh trijunction of Bijnor, Nainital and Garhwal districts have further confirmed the theory that many million years ago the Gangetic plain was covered by a sprawling sea. The wood specimens whose fossils have been discovered by a scientist of the Birbal Sahni Institute of Palaeobotany need very humid atmosphere for their growth. Since geological changes, many million years ago made the foothills of the U.P. Himalayas too dry for the woods now found in fossil forms to survive they became extinct. Their modern counterparts are, however, still found near Chittagong and southwards along the coastal strips of the Malayan Peninsula where humidity is much greater than in the region at the foothills of the U.P. Himalayas.

Another finding of fossils of organic material in Himachal Pradesh Siwaliks leads to the belief that there must have been oil formation there as well. A section of oil scientists are said to be of the view that intensive seismic surveys of the area are likely to lead to the discovery of folds where oil might still be laying trapped.

Bengal considering appointment of service commission

The West Bengal Government is likely to set up a Selection Committee for the appointment of teachers in 187 private colleges in Bengal. The Director of Public Instruction will be the Chairman of the committee in which one representative from each of the Universities of Calcutta, Burdwan and North Bengal would be associated. Other members will be the experts on individual subjects to be nominated by the State Government.

Mr Sambhu Ghose, the Minister for Higher Education, said that the decision with regard to the Selection Committee had been taken after full consideration by the Cabinet. According to him the recruitment of teachers in many colleges had remained suspended for the last two years in the absence of a service commission for the college teachers as required by the West Bengal College Teachers' Security of Service Act, 1975. The Government is considering the feasibility of setting up Service Commission in the near future. Mr Ghosh further clarified that the government might have to meet the entire financial cost on account of the colleges' share of the salaries of the teachers and non-teaching staff numbering about 6,000 and 5,500. Additional sum of Rs 2.5 crore is likely to be spent on this account. He said that 85 to 90 private colleges could not pay their share of the staff salaries which was only 25 per cent of the total amount. The Government spends over 30 lakhs towards meeting their deficit every year.

Recent trends in educational planning

Dr. P.C. Chunder, Union Education Minister, recently informed the Consultative Committee of Parliament of his Ministry that the number of subjects prescribed for the secondary stage of the new pattern of educational system would be drastically reduced. He said that the final

report of the Syllabi Review Committee, appointed a few months back to consider the changes in the contents of the textbooks and syllabi for the 10 years school under the new pattern, was expected to be submitted to the government shortly. The Minister said that he would welcome concrete suggestions for the improvement of the education pattern. He however cautioned that the issue would have to be examined from the practical angles.

While discussing the eradication of illiteracy in the country Dr. Chunder emphasised the need to involve political parties and trade unions in the literacy movement by members of all political parties. It was also suggested that adult literacy should be functional in its approach.

The Minister assured the committee that these points had been taken care of in the draft policy resolution on the issue to be placed before the recently constituted National Board of Adult Education. If necessary, the Board would be expanded to include more non-officials.

Several members called for changing the class character of the present education system and removal of the regional imbalances in this regard.

The Minister informed the committee that the University Grants Commission had recently liberalised the condition of eligibility for granting assistance to

colleges. He hoped that more colleges would be assisted by the UGC during the current financial year.

Referring to the issue of examination reforms, raised by a member in the course of the discussions, the minister told the committee that 66 universities had already introduced sessional evaluation.

Besides, 23 universities were developing question banks. The Association of Indian Universities had developed about 70,000 questions in 10 subjects at the undergraduate level which were being published subject-wise to help universities develop their own question banks.

The Minister assured that he would keep in view a member's suggestion that while sending cultural delegation abroad, stress should be laid on neighbouring countries.

Dr. Chunder also said the controversial school text-books in history had been referred to "some historians" for opinion and had not been withdrawn. The controversy is over a reported move by the new government to withdraw "Medieval India" by Romilla Thapar and "Modern India" by Bipan Chandra published by the National Council of Educational Research and Training an official agency and prescribed for secondary schools.

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A list of Doctoral Theses Accepted by Indian Universities

SOCIAL SCIENCES

Anthropology

1. Patel, Ved Prasad. Comparative study of tribal and non-tribal peasantry in Madhya Pradesh. Ravishankar University.
2. Saha, Nirmal Kanti. Adoption of agricultural practices and social change among farmers in West Bengal. University of Calcutta.
3. Sengupta, Amitabha. Forms of economic relationship in a Bengal Village: A study of intercaste relations in changing economy. University of Calcutta.

Sociology

1. Narayana Pillai, G. Social background of political leadership in Kerala. University of Kerala.
2. Pant, Nirajan. Citizenship, leadership and civic life. I.I.T., Kanpur.

Political Science

1. Bandyopadhyay, Debkumar. The limits of loyalty: The right of resistance in political thought. University of Calcutta.
2. Darshankar, Yamaji Fakeerchand. Leadership in Panchayat Raj: A study of Bhir District. Marathwada University.
3. Gopal Singh. Politics and violence: A study of Gujarat upsurge. Jawaharlal Nehru University.
4. Puri, Geeta. Delhi Pradesh Jana Sangh: A study of ideology and organisation. Jawaharlal Nehru University.
5. Rajendra Prasad Singh. Jawaharlal Nehru's contributions to socialism. Bihar University.

Economics

1. Bakshi, Prakash. Agricultural development and small farmers in Madhya Pradesh: A case study of Raipur District. Ravishankar University.
2. Chakravarti, Tapas Kumar. Financial market and the structure of interest rates in India for the period 1950 to 1970. Visva-Bharati.
3. Gopinathan Nayar, P.R. Education and economic development in Kerala. University of Kerala.
4. Jayalakshmi, M. Impact of family planning programme on the rural households in the selected three taluks of Coimbatore District with special reference to their food habits and food expenditure. University of Madras.

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1. Babu, N. A comparative study of personality factors of high intelligence—high creative thinkers and high intelligence—low creative thinkers in secondary schools. University of Kerala.
2. Bhattacharyya, Durgada. Learning disabilities in algebra: Diagnosis and prevention. Visva-Bharati.
3. Camoerta, Amarjit. A study of naturalism in education with special reference to modern education. Gauhati University.
4. Chaudhary, Umrao Singh. An evaluation of nationalized Hindi text-books (Classes I through VIII) of Madhya Pradesh. University of Indore.
5. Christian, Jyotsna Anandrai. A study of fear of failure, hope of success, achievement motivation, anxiety and concern in the girl students of Sardar Patel University in relation to their socio-economic status and performance. Sardar Patel University.
6. Guray, Krishna Shankar. To survey the applied nutrition programme and to find out the ways and means to improve the same through schools. Shivaji University.
7. Naran, S.K. A study of academic performance to some personality and perception variables. Gujarat University.
8. Patel, Ambalal Desaiabhai. Development and try-out of auto-instructional programmes in some units of Geometry for Class-VIII and to study its effectiveness in the context of different variables. Sardar Patel University.
9. Sree Rama Murthy, M. Construction and standardisation of a scale for assessing the emotional behaviour of secondary school children as basis for education and vocational guidance. Osmania University.

Management

1. Sharma, Chandra Kant. Management and organisational pattern of university libraries in Madhya Pradesh, India. Ravishankar University.

HUMANITIES

Philosophy

1. Basuri, Benukar. A comparative study of the classical and modern treatment of disjunction. Visva-Bharati.
2. Pandey, Jagan Nath. Gita ka karam darshan: Siddhant aur proyog. University of Bihar.

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1. Katamble, Vaman Dudapa. The rural novel in Indian writing in English, 1920-1970. Shivaji University.
2. Narayanaswami, V.R. Language and style in R.K. Narayan's fiction. University of Madras.
3. Ram Chandra Prasad. The art of John Webster: A study of the White Devil and The Duchess of Malfi. University of Bihar.

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2. Bhattacharya, Dipak. The development of some important Vedic legends and ideas. Visva Bharati.
3. Kailash Prasad Singh. Sanskrit subhashiton ka shakshik mulayankan. University of Bihar.
4. Mishra, Vidhata. Prachin Bharatiya shikshan paddhati. University of Bihar.
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3. Dharmveer Singh. Bhojpuri lok geeton ke samajik tatha sanskritik prishthbhumi. University of Bihar.
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6. Laghve, Namdeo Rao. Samkaleen sanskrit ke bhumika per Kabir ke vichardhara, sadhna aur sahitya-chetna ka tulnatmak anusheelan. University of Saugar.
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2. Chakraborti, Jayanta Kumar. Techniques in Indian mural painting. University of Calcutta.

3. Muzaffar Alam. The Mughal Centre's relations with the Subas of Awadh and the Panjab, 1707-1748. Jawaharlal Nehru University.

4. Shukla, Ashok Kumar. Freedom movement in Chhattisgarh 1857-1947 A.D. Ravishankar University.

5. Vasantha Bai, T.R. History of Thanjavur through the ages. University of Madras.

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Essential Qualifications For:

4. University Engineer

Graduate in Civil Engineering from a recognised University, possessing good working knowledge of Electrical Engineering.

At least 15 years' experience in R.C.C. design, cost estimation, and in designing, constructing and maintaining buildings, roads and utility services like water supply, sanitary gas and electric installations and sewage system.

Capable of handling electric motors, pumps, fluorescent tube lights, window type air-conditioners, electric geysers and coal fired hot water supply systems.

Must have at least 10 years administrative experience in responsible posts. Should be conversant with contract law and P.W.D. accounting procedure.

5. Technical Officer

Degree in Electronics with 2-3 years experience OR Diploma in Electronics with 10 years experience OR M.Sc. Physics with Electronics as a special paper with at least 5 years experience of handling of electronics equipment.

6. Senior Technical Assistant (Technician)

M.Sc. Physics with Electronics as a special paper or Bachelor's degree in Electronics or Diploma in Electronics with five years experience of handling of Electronics Laboratory Equipment.

7. Technical Assistant

Graduate in Science. Experience in Laboratory techniques of the subject.

8. Laboratory Attendants

Should have passed the Matriculation or an equivalent examination with science subject.

II. Special/Desirable Qualifications For:

1. Professorship in Physics "Aryabhatta Chair"

Should be eminent scholar either in Theoretical or Experimental Physics.

2. Readership in Anthropology

Intensive field work experience in tribal/peasant societies. Specialization and teaching experience in one of the following branches:

- (1) Kinship
- (2) Social Structure
- (3) Peasant Social System
- (4) Social Change in Tribal/Peasant Society
- (5) Political Anthropology.

3. Readership in Geography

Specialization in Industrial Geography or Transportation Geography or Political Geography.

4. Lectureship in Economics in the Department of African Studies

- i. Research work on problems of African Economics;
- ii. Knowledge of any African Language.

5. Technical Assistant

Five years experience in Anthropological Laboratories and field work. Adequate experience of maintenance and handling of Anthropological stores and Laboratory equipment.

6. Laboratory Attendants

- i. Should have worked in a Laboratory.
- ii. Minimum two years experience in Anthropological Laboratories and field work.

The prescribed application form can be had from the Information Office of the University either personally or by sending a self-addressed envelope (size 5"×11") with postage stamps worth Rs 2.55.

Selected candidates will have to produce the original documents relating to their age, qualifications, experience, etc. at the time of interview.

Applications (separate for each post) accompanied by attested copies of degrees, other certificates, mark-sheets published research articles, etc. should reach the undersigned not later than 17th December, 1977.

Note: 1. It will be open to the University to consider the names of suitable candidates who may not have applied.

Relaxation of any of the qualifications may be made in exceptional cases, in respect of all teaching posts on the recommendations of the Selection Committee.

2. Canvassing in any form by or on behalf of the candidates will disqualify.

3. Candidates from outside Delhi for teaching posts, called for interview will be paid contribution towards travel expenses equivalent to 1½ single Second Class Rail fare.

4. Those who had applied in response to the earlier advertisements for Readership in Anthropology and Lectureship in Economics for the Department of African Studies, need not apply again but in case they have any additional information to supply, they may do so.

Delhi 110007.

REGISTRAR

16th November, 1977

ALIGARH MUSLIM UNIVERSITY
Advertisement No. 28/77-78

Applications, on the prescribed form are invited for the following posts:

1. Reader in Zoology (Temporary but likely to become permanent)
Scale: Rs 1200-50-1300-60-1900 plus allowances.

Qualifications

(a) A first or High second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research Degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching Postgraduate classes and some experience of guiding research.

2. Reader in West Asian Studies (History) (Temporary but likely to become permanent). Scale: Rs 1200-50-1300-60-1900 plus allowances.

Qualifications

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard in Modern Arab History/Arabic Thought; and (c) At least five years experience of teaching postgraduate classes and some experience of guiding research. Knowledge of Modern Arabic.

Desirable

Knowledge of West Asian Social & Cultural Trends. Working knowledge of French, German or Russian.

3. Lecturers in West Asian Studies (One each in Economics and Geography) Scale: Rs 700-40-1100-50-1600 plus allowances.

Qualifications

(a) A Doctor's Degree or research work of an equally high standard; and (b) consistently good academic record with first or high second class (B in the seven point scale) Master's Degree in the subject concerned or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Desirable

Economics: Preference will be given to candidates who have some research experience and have worked on any aspect of West Asian Economics and/or have experience of teaching West Asian Economics.

Geography: Preference will be given to candidates who have worked on any aspect of Arab Geography and have some knowledge of the Geography of West Asian and/or have experience of teaching West Asian Geography.

4. Professor of Mathematics (Applied Mathematics) Scale: Rs 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications

(a) A First or High Second Class Master's Degree in the subject concerned of an Indian University or equivalent foreign qualifications; (b) A research degree of a doctorate standard

or published work of a high standard; and (c) At least ten years experience of teaching postgraduate classes and guiding research.

5. Lecturer in Linguistics

Scale: Rs 700-40-1100-50-1600 plus allowances.

Qualifications

(a) A Doctor's Degree or research work of an equally high standard; and (b) Consistently good academic record with first or high second class (B in the seven point scale) Master's Degree in the subject concerned or an equivalent degree of a foreign University.

Having regard to the need for developing inter-disciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

Desirable

Linguistics Transformational Generative Grammar and Semantics. Published research work on Urdu Linguistics.

For Lecturers

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M. Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23 x 10 cm. Last date for receipt of applications is 15th December, 1977. Incomplete applications and those received late may not be considered.

Higher initial start may be given to candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

Jamalur Rahman
REGISTRAR

PANJAB UNIVERSITY
CHANDIGARH

Advt. No. 32/77

Applications are invited for the following posts in the Department of Zoology in the pay scale of Rs. 1500-60-1800-100-2000-125/2-2500, so as to

reach the Registrar, Panjab University, Chandigarh along with postal orders for Rs 7.50 by 17.12.1977.

1. Professors of Zoology-2
2. Professor of Parasitology-1

QUALIFICATIONS

An eminent Scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Candidates who do not possess a Doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their research/published work.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees may, however, send their applications on the prescribed proforma direct to the University. They may route another copy through their department. They will be allowed to present themselves for interview only on the production of a 'No Objection Certificate' from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the office of the Finance and Development Officer, Panjab University, Chandigarh, making a written request accompanied with self-addressed stamped envelope of 23 x 10 cms.

* * *

RABINDRA BHARATI UNIVERSITY
CALCUTTA-700 007

Employment Notification No. RB

APPLICATIONS ARE invited for the post of Deputy Registrar in the scale of Rs 1100-50-1600/- plus usual benefits of contributory P.F., H.R.A. and D.A. as may be admissible. Higher initial pay may be considered in the case of exceptionally qualified candidate. (N.B. The post is temporary but likely to be permanent soon).

QUALIFICATIONS: (a) **Essential:** Good Master's degree of any recognised University. Administrative experience for at least five years with experience of conducting University examinations. (b) **Desirable:** Administration experience preferably as Deputy Registrar or Deputy Controller or Assistant Registrar or Assistant Controller of Examinations of any University/or Head of any other recognised Institute not below the rank of a College. AGE: Not above 50 years age on 1.12.77, relaxable in case of specially qualified candidate. Applications in prescribed forms (available from University Office) along with attested copies of Mark-sheets from S.F./Matriculation onwards must reach the Registrar by 17th December, 1977, positively together with a non-refundable fee of Rs Rs 5/- only by Crossed Indian Postal Order payable to RABINDRA BHARATI.

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University lews

A CHRONICLE OF HIGHER EDUCATION & RESEARCH DECEMBER 16, 1977 80 PAISE



Mr. Govind Narain, Chancellor of Bangalore University presenting gold medals and prizes to the students who won distinctions in various examinations.

ALIGARH MUSLIM UNIVERSITY

Advertisement No. 29/77-78

Applications, on the prescribed form, are invited for the following posts.

- 1. Professor of Botany (Plant Physiology or Cytogenetics)**
Scale Rs. 1500-60-1800-100-2000-125/2-2500 plus allowances.

Qualifications ordinarily required

(a) A first or a high second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research degree of a doctorate standard or published work of a high standard; and (c) At least 10 years experience of teaching Postgraduate classes and guiding research.

- 2. Reader in Sunni Theology (Temporary but likely to become permanent)**
Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications ordinarily required

A first or good second class Master's Degree in Sunni Theology, Arabic or Islamic Studies or its equivalent or a Fazil of a well reputed Madrasah in India or abroad. At least five years experience of teaching postgraduate or equivalent higher classes in a College, University or a well known Madrasah. Ph.D. Degree or any published scholarly work.

Desirable

Adequate knowledge of English.

- 3. Reader in Shia Theology (Temporary but likely to become permanent)**
Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications ordinarily required

A first or good Second Class Master's Degree in Theology or Arabic or its equivalent or a Fazil of a well reputed Shia Madrasah. Ph.D. Degree in Theology or Arabic or Certificate of Ijtihad from Najaf (Iraq) or Qum (Iran) from well known Ulmas or published scholarly work in Theology. At least five years experience of teaching postgraduate or equivalent higher classes in a college, University or a well known Madrasah.

- 4. Reader in Statistics (Temporary but likely to be made permanent)**
Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications ordinarily required

(a) A first or High Second class Master's Degree in the subject concerned of an Indian University or an equivalent foreign qualification; (b) A research Degree of a doctorate standard or published work of a high standard; and (c) At least five years experience of teaching Postgraduate classes and some experience of guiding research.

Desirable

Post M.Sc. Diploma and/or Research work of high standard in one or more of the following: Econometrics; Demography; Design of Experiments; Mathematical programming.

- 5. Reader in Economics (Plan Post) (Public Finance)**
Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications ordinarily required

(a) A first or a high second class Master's Degree in Economics with Public Finance as a special paper of an

Indian University or equivalent foreign qualifications; (b) Research degree of a doctor's standard or published work of high standard in the field of Public Finance; and (c) At least five years experience of teaching Postgraduate classes in Public Finance and some experience of guiding research.

- 6. Reader in Economics (Temporary but likely to become permanent)**
Scale Rs. 1200-50-1300-60-1900 plus allowances.

Qualifications ordinarily required

(a) A first or a high second class Master's Degree in Economics from an Indian University or an equivalent foreign qualification; (b) A research degree of a Doctorate standard or published work of a high standard; and (c) At least five years experience of teaching Postgraduate classes and some experience of guiding research.

Desirable

Knowledge of Statistics/Econometrics.

- 7. Lecturer in Economics (Temporary but likely to become permanent)**

- 8. Lecturers in English (Temporary but likely to become permanent)**

Scale of Sl. No. 7 & 8. Rs. 700-40-1100-50-1600 plus allowances.

Qualifications ordinarily required (For Sl. No. 7 & 8)

(a) A Doctor's degree or research work of an equally high standard; and (b) consistently good academic record with 1st of high 2nd class (B in the seven point scale) Master's degree in a relevant subject or an equivalent degree of a foreign University.

Having regard to the need for developing interdisciplinary programmes, the degrees in (a) and (b) above may be in relevant subjects.

FOR LECTURERS

Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above.

Provided further that if a candidate possessing a Doctor's degree or equivalent research work is not available or is not considered suitable, a person possessing a consistently good academic record (weightage being given to M.Phil. or equivalent degree or research work of quality) may be appointed provided he has done research work for at least two years or has practical experience in a research laboratory/organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within five years of his appointment, failing which he will not be able to earn future increments until he fulfils these requirements.

Prescribed application forms and instructions may be had from the Deputy Registrar (Executive) either personally or by sending a self-addressed envelope of 23×10 cm. Last date for receipt of applications is 30th December 1977. Incomplete applications and those received late may not be considered.

Higher initial start may be given to

candidates possessing exceptional qualifications and experience. Candidates interviewed may be paid contribution towards their T.A. equal to one single second class railway fare only.

**Jamalur Rahman
REGISTRAR**

* * *
**PANJAB UNIVERSITY
CHANDIGARH**

Advertisement No. 35/77

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh, along with postal orders for Rs. 7.50 by 31.12.1977.

- 1. Professor of Biochemistry-1**

(Pay-scale: Rs. 1500-60-1800-100-2000-125/2-2500).

Qualifications

An eminent scholar with published work of high quality actively engaged in research. Ten years' experience of teaching and/or research. Experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

- 2. Reader in Botany-1**

Taxonomic mycology/Aphylllophorales) (Pay-scale: Rs. 1200-50-1300-60-1900).

- 3. Readers in Geology-3**

(Pay-scale: Rs. 1200-50-1300-60-1900). (Centre of Advanced Study in Geology).

Specialised fields for posts of Readers in Geology:

- Structural Geology
- Sedimentology
- Optical Mineralogy

Qualifications for the Posts of Readers

Good academic record with a doctoral degree or equivalent published work. Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.

About five years' experience of teaching and/or research provided that at least three of these years were as Lecturer or in an equivalent position.

This condition may be relaxed in the case of candidates with outstanding research work.

Candidates who do not possess a Doctoral degree are required to submit 10 typed/cyclostyled copies of brief resume of their research/published work.

Persons already in service should route their applications through proper channel. Incomplete forms and those received after the due date will not be entertained. Serving employees may, however, send their applications on the prescribed proforma direct to the University. They may route another copy through their departments. They will be allowed to present themselves for interview only on the production of a "No Objection Certificate" from their employers. Canvassing in any form will disqualify a candidate.

Application forms can be obtained from the office of the Finance & Development Officer, Panjab University, Chandigarh, making a written request accompanied with self-addressed stamped envelope of 23×10 cms.

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*Opinions expressed in the articles
and reviews are individual and do
not necessarily reflect the policies
of the Association*

Hony. Editor : ANJNI KUMAR

Problems of Affiliated Colleges

J. L. Azad*

The four thousand and odd affiliated colleges, which dot the educational expanse of this country, are responsible for 90 percent of the enrolment at the undergraduate stage and about 62 percent in the postgraduates and research courses. A very large majority of these institutions (about 78 percent) are under private managements with varying capacity to provide financial inputs and management competencies. As a consequence, the quality of education imparted by these institutions is far from uniform. It needs hardly be emphasised that no improvement in the university education system is possible unless the quality of these institutions, which are responsible for such a large proportion of university enrolment, is improved.

The problems of the affiliated colleges start from their very inception. Not all of these colleges, particularly those under the private managements, come into existence because of the felt need for their establishment. A number of these institutions are established on account of extra-academic considerations. Once a college comes into existence, it has to seek affiliation to the university by fulfilling certain minimum requirements by way of buildings, staff, reserve funds etc. In a number of cases, the managements that establish them cannot muster adequate resources to provide all the infra-structure for a good college education. The universities have, therefore, to find a way to bypass their rules of recognition. This is through the grant of 'temporary' recognition. That temporary affiliation is granted on a large scale can be realised by the fact that, in December 1976, about 2 out of every 5 colleges were listed as temporarily affiliated.

The temporary recognition affects the colleges adversely in more than one ways. Firstly, the spectre of withdrawal of recognition always looms large over the heads of the staff and the students. Secondly, the college is ineligible for any assistance from the U.G.C. unless it is permanently affiliated to a university and has been declared fit under section 12A of the UGC Act, 1956 for receiving grants. Thirdly, an institution with temporary affiliation cannot attract better faculty and students. Thus both from the point of view of financial resources and the quality of students and staff, such institutions are at a disadvantage.

The affiliated colleges, whether permanently, or temporarily affiliated have a very tenuous relationship with the universities, so much so that the colleges do not appear to be a part of the university configuration. The rules of affiliation laid down by the universities are, by and large, vague and imprecise. The university rules generally insist upon "adequate"

*Chief (Edn.), Planning Commission.

buildings and "competent" staff. What these terms mean in actual practice is anybody's guess.

The grant-in-aid rules laid down by a number of State Governments sometimes lack dynamism and are attuned to a set institutional pattern. The first problem that the affiliated colleges have to face is the denial of state assistance for a period, which may vary between 2 years to 5 years. During this period, the colleges have to manage their own affairs. As a consequence, the college managements are forced to appoint staff who are willing to work without regard to the timely availability of salaries and who do not insist upon good service conditions. Quite understandably, the staff in these institutions cannot be of the requisite standard. The students who flock to these institutions are either rejects from other institutions or come from lower strata of society, who cannot manage to get admission to better institutions. Another by-product is that the low quality staff appointed in the initial stages cannot be replaced by better qualified persons even when the college can afford it.

Planned Institutional Expansion

It has been often suggested that the educational mess, in which we find ourselves today, could be cleared by controlling the establishment of these institutions. On deeper thought, however, the solution appears to be too simplistic and impracticable. The proliferation of the collegiate institutions of a general type is caused by the mounting demand for university places. So long as the secondary school leavers do not have the requisite employment facilities, they will continue to knock at the portal of the university institutions. It is, therefore, necessary that something tangible is done in order to control the ever-increasing body of students joining the university institutions.

The problem is extremely complicated and hypersensitive in the Indian situation. Through a policy of expansion of elementary education, educational facilities are now becoming increasingly available to those groups of population, which never had any tradition of education in their families for centuries. If the university enrolment is restricted, the adverse effect would be felt by the most vulnerable sections of our society. Restrictions of admissions across the board is, therefore, ruled out in the present situation.

The Planning Commission has suggested a package programme to solve this problem. This consists of vocationalisation of higher secondary education, enabling large number of secondary school leavers to enter employment; limiting admissions to regular institutions on the basis of merit, while making suitable reservations for backward students and meeting the rest of the social demand for higher education through non-formal system, that is evening colleges, correspondence courses, part-time courses and private study. This would necessitate preparing an integrated policy of educational development in which the school education would also respond in a positive

way to curbing the number of aspirants for higher education.

The universities will also have to exercise a more decisive influence on the standard of educational facilities provided by the affiliated colleges. They should lay down rules of recognition in very clear terms and they should insist upon the observance of these rules without exception. Some relaxation may, however, be given for colleges in the backward areas and those catering to the needs of the economically and socially backward classes. Further, academic affiliation should not be a once-for-all affair. It should be continuously earned.

The State Governments should have a programme of planned institutional spread. The educational needs of the different regions in the state should be surveyed keeping in view the likely demand for university places as a result of the expansion at the lower levels. The capacity of the existing institutions to provide for the assessed needs may be kept in view. The expansion may be allowed only in those areas, in which the demand cannot be met by the existing institutions.

It has also been reckoned that there are a large number of colleges, which according to the U.G.C. criterion are subviable i.e. their enrolment is less than 400. This underlines the need for having a proper survey of the catchment area, so that the colleges could become viable in reasonable time-span. In case, some of the existing colleges are in no position to become viable, they should either be closed down or merged with the other colleges.

The problem of finance is very acute at least in the initial stages, when these institutions are not eligible for any assistance either from the state governments or the University Grants Commission. It is necessary to insist upon buildings and some reserve fund from the management before the college is even considered for affiliation. No college management should set up an institution, without its fulfilling the minimum conditions of affiliation. It is advisable for the state government to set up an institution under its auspices rather than allowing a private management to set up a sub-standard institution, which can at best impart an indifferent quality of education.

A word about the academic problems faced by the affiliated colleges. The affiliated colleges are somehow bound to the chariot wheels of the universities and are mainly at the receiving end. They are hardly given freedom to experiment with new ideas. The curricula, text-books, reference books etc. are laid down by the universities and exceptions are hardly allowed. The other curbing influence on the freedom of the institutions is the spectre of examinations, which stultifies initiative and acts as a strong barrier to experimentation. In order that the colleges should provide education which is relevant to the students' needs, they should be given freedom to modify their syllabi with reference to the local conditions. They should also be a party in the assessment of students' performance. This is necessary to encourage the colleges to experiment with innovative ideas. □

Integrating National Service with Commerce and Management Education

S. M. Waseem*

The National Education Commission (1964-66) rightly emphasised:

"The destiny of India is now being shaped in her class-rooms. This, we believe, is no more rhetoric. In a world based on science and technology, it is education that determines the level of prosperity, welfare and security of our people. On the quality and number of persons coming out of our schools and colleges depends our success in the great enterprise of national reconstruction whose principal objective is to raise the standard of living of our people...."

Similarly, the Resolution of the Government of India regarding the Education Commission spoke of "the development of a national system of education rooted in the basic values and the cherished traditions of the Indian nation and suited to the needs and aspirations of a modern society."

Thus, our academicians, the educational administrators and the society as a whole, have to shoulder together the responsibility for creating conditions conducive to the fulfilment of the hopes and aspirations of our developing economy.

Purposive Education

The development of education in India after Independence has been taking new strides. The number of schools, colleges and universities has been increasing. Thus, we find that in August 1, 1975, there were 99 Universities and 9 deemed Universities. The enrolment of pupils at the University stage (arts, science and commerce) stood at 3.6 lakhs in 1950-51, at 8.9 lakhs in 1960-61, 22.1 lakhs in 1970-71 and at 31.7 lakhs in 1973-74. Further, looking to the inbuilt weaknesses in our socio-economic structure, we can safely infer that millions more would have come within the fold of education but these constraints kept them away and, therefore, busy elsewhere. However, it may be remarked that the ever-increasing numbers, though indicating a significant trend, do not necessarily lead us to assured goals. Because, education in India, if required to be purposive, needs dynamic direction and an objective planning. In short, we have to give new meaning and action-biased direction to our Indian education. "It is education alone", to quote German Philosopher Fichte, "which can save us from all the evils by which we are oppressed". The mass poverty, care-ridden faces and the widespread taboos and comparative socio-economic backwardness in many parts of the country, all indicate that educational reconstruction is *sine qua non* for growth and prosperity of this largest democracy of ours. Verily: "Education as a basic tool for surging ahead towards affluence,

can add much to the existing opportunities and their fruitful exploitation for bringing about the maximum good of the greatest numbers."

Various Committees and Commissions appointed by the Government have been recommending productive and fruitful changes in the coverage and contents of our Indian education. This presupposes that the students and the teachers have to be necessarily involved in the task of educational reconstruction. However, merely saying (that) "Universities are the homes of intellectual adventures", would not suffice. Something positive and coherent has to be determined as goal of higher education in the country. Newman rightly emphasized in 1852: "If a practical end must be assigned to a University course, then I say it is training good numbers of society." Karl Marx also in his famous treatise *Das Kapital* asserted: "The education of the future will in the case of every child over a certain age, combine productive labour with education (*Unterricht*) and athletics (*gymnastik*) not merely as one of the methods of realising social production but as the only method of producing fully developed human beings." United States' President Truman too is quoted to have said: "Our national policies must be administered by men of broad experience, mature outlook and sound judgement. But there is a critical shortage of such men—men who possess the capacity to deal with affairs of State.... We need men who can turn a group of specialists into working team and who can combine imagination and practicability into sound public programme. Men trained for this kind of administrative and political leadership are rare indeed." The experience of Britain too needs consideration. There "shortage of some goods and facilities of managerial skills, of technicians and of administrative personnel, combined with shortcomings in planning, have in many cases been the main limiting factors in development, with the result that projected developments have sometimes not been fully realised." Obviously, economic restoration in Japan during their *Meiji* era could become possible due to the fact that successful education could meet the needs of industry and trade. In view of our desire to climb up to new ladders of prosperity, we in India would have to bring pragmatism in our national education policy by bringing such changes in our courses and syllabi which can prepare our students to meet the socio-economic challenges of our surging new society. In short, the purpose of education and particularly higher education in India, must be very carefully determined. It needs a meaningful and dynamic push. We should, therefore, successfully strive to "provide a coherent picture of the universe and an integrated way of life." Commerce/Management education has to play a key-role in the realisation of these goals.

* Asstt. Professor, Regional Engineering College, Srinagar.

Pragmatic Higher Education

With a view to give purposive and utilitative dimensions to our Indian education, several Committees and Commissions have been suggesting measures. Deshmukh Committee (1959-60), for example, suggested compulsory National Service for one year after the higher secondary stage for the students seeking entry in the first degree course of any Indian University. The Saiyyidain Committee also recommended the introduction of a voluntary National Service Scheme which should be extended imbibing varied and rich programmes of activities. The National Education Commission (1964-66) popularly known as Kothari Commission also recommended that work experience based on social service at school/college level should form an integral part of education. With a view to achieving the purpose of higher education including that of productivity, social and national integration, modernisation, social, moral and spiritual values and a knowledge of contemporary religions, the Commission suggested:

- (a) 30 days' social service at lower secondary level in one or more stretches,
- (b) 20 days' social service at higher secondary level in one or more stretches, and
- (c) 60 days' social service at undergraduate level in one or more stretches.

However, in June 1967, the Union Cabinet approving the recommendations of a Ministerial Sub-Committee, made it obligatory for male university students to join any one of the three schemes for two years of their first degree course, namely: the National Cadet Corps (NCC), the National Service Scheme (NSS), and the National Sports' Organisation (NSO). Of the three, the NSO was to admit only students with sports' and games' proficiency. However, after consulting the Planning Commission, it was felt that this scheme (NSS) should be tried as a pilot project during the Fourth Five Year Plan. Thus, the scheme, introduced from October, 1969 on a voluntary basis, planned to cover about 2,00,000 students by 1973-74. The scheme has been in operation in all the States. The significance of the scheme for the study-service activities or to the students in our educational institutions, derives from (a) the sense of participation in the task of national reconstruction, (b) the role of education in nation building, and (c) the moral responsibility generated by the social context. The first two factors though being realised recently, have a great role to play in moulding the mind and attitudes of our emerging generations. The National Service Scheme plans to utilise students' leisure time in fruitful community service activities. Initially, it covered 38 Universities and institutions with a provision for enrolment of 40,000 students. In 1970-71 about 90,000 students, and during 1971-72 around 1,20,000 students worked under the scheme. By the end of the Fourth Five Year Plan, it was planned to cover at least 10 per cent of our students engaged in graduate studies. The utility of the scheme may be further gauged if one looks to the fact that students mixing with and helping the community around, get first hand information regarding the

problems and prospects of socio-economic development. This prepares them to shoulder the responsibilities later on in their professional careers. "There is no denying the truth that there are instances in our world economic history when, in spite of a comparative abundance of raw material and other inputs including an adequate and cheap supply of labour, the economies continued to live in a vicious circle of poverty and under-development." The technical/managerial personnel must, therefore, be made available in increasing numbers. But, education divorced from realities has little or no role to play in the task of national reconstruction. The work-experience for the students, therefore, would enrich them greatly. Further, students drawn from different parts of the country and with different socio-economic and cultural backgrounds work together for a common cause. This helps in their re-orientation and self-fulfilment. Besides developing their competence as workers in a developing society, it helps develop their personalities as a whole. It is, therefore, no wonder that Union Ministry of Education and Social Welfare is giving ever-increasing importance to the scheme. The University Grants Commission had set up a group to suggest ways of integrating National Service with College Curriculum. Needless to emphasise that this would require a reconstruction and redrafting of the syllabi (including that of Commerce and Management) with a view to the achievement of the hopes and aspirations of both the students and the community around. Even if pursued on a voluntary basis, the students under the NSS should use their skills and knowledge for giving direct practical help to the people. NSS students from Commerce/Management Faculties can always take up some specialist activities to help the community around:

- Demonstrate cash value of new crops.
- Encourage improvements in cultivation methods.
- Explain the utility of the use of manures and fertilisers.
- Help promote village libraries.
- Help publicise local development programmes (by working with local people and specialists' groups, producing pamphlets and giving lectures etc.)
- Help in the field of marketing.
- Help establish cooperatives (including the credit consumers' cooperative societies).
- Introduce cash crops.
- Help the people to analyse the costs and benefits of their agricultural practices.
- Run courses for the village people (particularly on topics related to agriculture and development).
- Help build village bridges, roads, water supplies, irrigation canals, etc.
- Carry out reafforestation projects with the help of local young people.
- Help resolve commercial disputes.
- Help the village Head in the field of village administration.
- Help develop village social organisation.

The activities listed above, have been quoted to

(Continued on page 666)

PAU's Services to Farmers

Amrik Singh Cheema*

The Punjab Agricultural University, Ludhiana, a premier agricultural institution in Asia, came into being in 1962. It provides graduate and postgraduate instructions in agriculture, agricultural engineering, veterinary and animal sciences, home science and basic sciences and humanities.

The university has so far produced 2741 graduates in agriculture, 383 in agricultural engineering, 390 in home science, 705 in veterinary science and 129 in various basic sciences and humanities. More than 1850 candidates have earned their M.Sc. degree in various fields of specialization, 58 qualified for M. B. A. and 325 have successfully completed the degree of Doctor of Philosophy.

Thus beside others, it prepares farmers' sons and daughters to become scientists, teachers and extension educators in agriculture and allied branches.

Package of Practices

The university has the exclusive responsibility in the State for doing, both fundamental and applied, research in various branches of agriculture and has earned a distinction both from the scientists the world over and farmers of the Punjab. However, unless this expanding knowledge is accepted by the extension workers and through them communicated into the actions of the farmers, it will not be of much use. For this purpose all the agricultural officers of the State hold discussions with the experts of the university twice every year wherein they discuss new research findings and come to an agreed package of practices to be recommended to the farmers for various rabi and kharif crops. These agreed recommendations are printed both in English and Punjabi and are supplied through all the field extension workers, all other institutions concerned with the communication of new findings to farmers and are also sold to farmers. These books serve as a guide for the dissemination of all agricultural innovations to the farmers. Thus whatever may be the agency communicating agricultural knowledge to farmers, the recommendations remain the same.

Farmers' Fairs

This university has been a pioneer in introducing the idea of organising Kisan Mela and Kisan Diwas during the rabi and kharif seasons respectively each year. These functions have been a great success and of great educative value. There is much enthusiasm and keenness among the farmers to visit the

university on these days to acquaint themselves with the latest advances in technology and to discuss their farm problems with the experts. Generally over 15,000 farmers visit the 2-day Kisan Mela and over 8,000 farmers visit one-day Kisan Diwas, which are held in the months of March and September respectively. Even since the inception of this university, more than two lakhs of farmers have visited the university on these days. On these occasions, seeds of new varieties of crops released by the PAU are sold to the farmers in small packets. This process has helped to spread new seeds throughout the State in the shortest possible time. During the Kisan Diwas which was held in September '77 seeds of improved varieties worth over 3.75 lakhs, mineral mixture for animals for over Rs. 10,000 and university publications for more than Rs. 10,000 were purchased by the farmers.

Training Courses for Farmers

The university has earned the distinction of being the Asia's largest farmer-training centre. Every year over 250 training courses are organised involving over 8,000 farmers, dairymen, poultry keepers, young farmers, farm women and extension workers. Specialized training courses in farm machinery, poultry, dairy farming, piggery, fruit and vegetable cultivation and preservation are popular with the farmers.

A training course in practical education which is of 14-week duration and is conducted for the sons of farmers who are educated and are settled on farming has become very popular. Two to three courses under this programme are being held every year since 1965-66. Keeping in view the increased demand for this course, another centre for this course has been opened at the Vocational Agricultural Training Centre, Gurdaspur.

The university is also running a research-cum-demonstration project for organising farm youth clubs. Various organisational approaches and individual and group projects are being tried through over 50 such clubs for boys and 10 for girls in the district of Ludhiana. On the basis of the experiences of this project, it may be possible to recommend to the State Government to start this programme in the whole of the State.

To strengthen the extension education programme and to spread the latest farm technology to every nook and corner of the State, a scheme of crop schools has been launched by the university. Under this venture, specialized training is imparted to the

*Vice-Chancellor, PAU, Ludhiana.

farmers of a particular area where a particular crop is grown in abundance. To start with, a sugarcane school was organised at Jullundur where the latest methods of sugarcane cultivation were explained to the participating farmers. Similar schools were held at Kapurthala and Gurdaspur for rice cultivation and at Faridkot for pulses cultivation. This programme has been acclaimed by the farmers and as such a series of such schools is being organized now for all the important crops of the State.

Before the onset of a particular sowing season the extension education wing with close collaboration of the State Department of Agriculture arranges district level training camps to give on-the-spot demonstrations to the farmers regarding the seed-bed preparation, seed treatment, sowing, use of weedicides and chemical fertilizers, irrigation, etc. This not only gives an impetus to the sowing operations, but serves as training centre for extension workers also and thus improves their efficiency.

Farm Advisory Service

Under this scheme the university specialists fan out to the districts to offer advice to the farmers in their fields. There are university-level extension specialists who operate from the campus. There are also district level extension specialists posted in the districts. These are for agronomy, soils farm management, extension education, horticulture, plant protection and farm machinery. The Advisory Service works in close liaison with the State Department of Agriculture. This service has the responsibility for disseminating the latest findings in their subjects among the farmers. The experts of the Farm Advisory Service also organise a number of demonstration centres in each district where the package of practices of different crops is demonstrated. Another on-the-spot scheme in operation is the arranging of the national demonstration plots. These are laid out in the farmers' fields where intensive cropping patterns are adopted and all the recommended practices are followed to demonstrate the maximum yield potential of important crops of the area. Field days are also organized at the Demonstration Centres as well as the national demonstration plots. On these days the farmers of the surrounding villages are invited to witness good standing crops, important crop operations, plant protection measures and the demonstration of agricultural machinery.

Publications and Publicity through Mass Media

The Communication Centre provides a bridge between the university and the farmers through the press, radio, television and university publications. It has done a commendable job by introducing written material into almost every farm home in the State.

The Centre publishes two monthly journals—**Progressive Farming** (English) and **Changi Kheti** (Punjabi). These are being sold to the farmers at more than 500 distribution points in and outside the

State through newspaper agents. Small extension bulletins published in English and Punjabi on various aspects of crop production, animal sciences and agricultural engineering are sold in thousands every year. Besides, two half-yearly books namely "Package of Practices for Kharif Crops" and "Package of Practices for Rabi Crops" and an annual digest called "Punjab Agricultural Handbook" have earned prestige for the university.

A close liaison is kept with the All India Radio, Jullundur by arranging experts' talks, preparing replies to farmers queries and sending weekly weather reports.

New Programmes

The university plans to conduct a soil survey of Punjab. On the basis of this survey, soil fertility charts of all the villages will be made. This will help increasing efficiency in the fertilizer use.

It also proposes to divide the State of Punjab on the basis of agro-climatic conditions. This would help in recommending right types of crop varieties and other farm practices.

A special follow-up programme for the young farmers who got training in scientific agriculture at the university, has been chalked out. Over a thousand such young farmers have been identified throughout the State and are being given guidance and training in order to help them, first to improve their own farming, and then to help other farmers of their village in modernising their agriculture.

Efforts are also being made to establish mini communication centres throughout the State in order to take latest research findings as nearest to farmers as possible.

The university also plans to conduct research on the farming systems so that a specific technology could be evolved and recommendations made according to the farm-size, texture of the soil, climatic conditions, level of productivity and available resources of the farmers.

It is generally felt that the farmers of Ludhiana district have gained maximum benefit from the University while other districts don't have the access to it. It is, therefore, decided to hold Kisan Melas at the regional level also on the lines of Kisan Diwas. First in the new series is a one-day Kisan Mela held on October 1, 1977 at Bhatinda. These regional Kisan Melas would help delivering the new farm technology to the remotest corners of the State.

Thus the PAU during its brief existence, has not only done an outstanding job in improving crop and animal culture, but has also won the confidence and appreciation of the entire farming community in the State. Farmers look up to this University as a place of pilgrim, a perpetual source of new knowledge and technology, and an institution on which they could always depend for expert guidance for modernising their farming. □

Education and Development

(From our special correspondent)

For the first time in its 13 years' existence, Bangalore University dispensed with the formal function of an annual convocation to admit new graduates into various academic disciplines. Instead, it held a small function to present gold medals and prizes. There was no special invitee to address the convocation. The Governor of Karnataka, Mr. Govind Narain, in his capacity as Chancellor of the University, addressed the new graduates through the medal and prize winners.

Normally, the University spends at least Rs. 50,000 for holding its annual convocation which will be attended by 5,000 to 6,000 people. This time the Vice-Chancellor, Mr. T. R. Jayaraman, decided not to hold the formal convocation not only as a measure of austerity but in view of the great

a welcome expansion of scientific and technical education required for economic development, they were at a critical stage when they badly needed proper manpower planning and allocation of places in higher educational institutions as far as possible on the basis of identified demand in various fields of economic activity.

The Chancellor conceded that there were practical difficulties in imposing any kind of ceilings on admissions. The educational base had to be broadened and diversified and they should provide eligible people from rural areas and under-privileged classes with access to higher education.

Quantitative expansion, Mr. Narain continued, was posing problems with regard to the quality of education. It might be difficult to find the increasing funds

was to be launched. The expanding economy would also create sizeable job opportunities. While he wished the new graduates found employment in keeping with their equipment, further efforts—governmental and private—had to be mounted to create abundant opportunities for self-employment.

There could be many fields for self-employment and adequate incentives had to be provided to promote them. Even the part-time employment schemes run by the University Vocational Guidance and Information Bureau had helped to predispose a number of graduates in that direction.

The Chancellor was very much conscious of the problems of the graduates of the year. Though they were not there at this function, they were not out of his mind. They were very much in his thoughts. He said: "While I am fairly certain that the graduates who have won distinction will find suitable employment without much delay or difficulty, I am deeply concerned about the fortunes of the others. I would like to appeal to them to think of self-employment in the event of their not being able to secure employment under Government or elsewhere. It is only if all the young men and women of talent engage themselves in productive employment that we may achieve rapid economic progress."

Mr. Narain said that they were engaged in the great adventure of nation-building. What they had achieved so far while significant enough, was not much compared with what remained to be achieved. There was still widespread destitution and deprivation. The bulk of the people were still illiterate. Insanitation and disease were still to be conquered. There were sections of society which suffered from disadvantages that needed to be raised to a level of equality with the rest. A fully free, democratic and socialistic society was yet to be developed.

There was a socio-economic transformation that was under way which needed to be accelerated. The young today, particularly like the new graduates, had to act as agents of change and

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human tragedy that overtook the Andhra, Tamil Nadu and Kerala coasts recently as a result of the cyclone.

In his address, the Chancellor spoke of the complex problems facing universities. The most difficult of these was the expansion in enrolment. While such enrolment rose from 23,000 in 1901 to 225,000 in 1946, it soared in one decade alone, in the sixties, from 980,000 to 2.7 million. At the present moment it might be anywhere around 3.5 million.

India, Mr. Narain said, was registering the highest percentage of transfer of secondary-school leavers to colleges. The idea that secondary education should be effectively terminal was not succeeding very much. While there had been, in the course of years,

that expansion consistent with maintaining proper standards would demand. Preference from the overall national point of view had to be given to primary education over university education. Expansion in an unplanned way led to imbalances in manpower availability and aggravated the problems of educated unemployment. "All in all this is a problem that is very much with us and for which we have to find a viable solution early," he added.

The Chancellor said that, meanwhile, they had to take all necessary steps to ensure that the country's educated manpower resources were fully utilised for national development. The Sixth Plan was likely to be largely employment-oriented and massive rural development programme

should develop the appropriate skills and attitudes. The Kothari Commission report rightly called for an educational revolution that would harness our human resources for rapid socio-economic development.

In the context of a massive and many-sided development under way in the country, Mr. Narain felt the new graduates had still an "exciting task" to perform, a goal and a purpose that could sufficiently give meaning and direction to their lives. He appealed to the young graduates to become "dedicated soldiers" in the fight against poverty, ignorance and disease and to play an effective role in the social and economic transformation of the country.

The spirit of democracy, the Chancellor said, demanded freedom of thought and expression.

It was necessary that in universities, which were the laboratories and proving ground for the country's new crop of intellectuals, independent thinking was encouraged and a spirit of inquiry promoted. Those who came out of universities inevitably provided leadership in politics, in the professions and in industry and commerce. They would be more or less intimately concerned with public affairs and issues. Therefore, they had to develop their critical and creative faculties so that they could make rational and free choices and take balanced, mature and sensible decisions. "Such freedom of thought when combined with a genuine empathy with the millions of our brothers and sisters will enable the products of higher education to contribute effectively to the development of the country."

Restructuring of Educational System

Prof. Satish Chandra, Chairman, University Grants Commission, delivered the convocation address at the S.N.D.T. Women's University on November 30, 1977.

He said that there had been a great deal of discussion in the country regarding the restructuring of the educational system. The shortcomings of our educational system are generally well-known. There has been too much emphasis on learning by rote, and on verbal skills, but not enough, on skills of value for those who have to work and earn by their hands, nor participation in activities, such as physical education, cultural activities, social service or extension work has been given enough emphasis. On the other hand, the education has been examination-oriented; and it fails to develop qualities of organisation, co-operation, sympathy for the weaker sections. Secondly, there has been too much emphasis on the formal system of education to the neglect of education for the masses. The present system caters to the needs of those who can

afford to study on a full-time basis, but pays little attention to the needs of those who can and must work to supplement the family income, and to carry out various chores of the family and the farm. It is true that we have been able to develop good quality institutions which are in no way inferior to the best institutions anywhere in the world but to which access is available only to students drawn from the upper and the middle classes. Recently, a select number of students from scheduled caste and scheduled tribe families have been provided limited accesses to these institutions. But this has not changed the position of a large majority in this category. In reality we have a dual system of education in the country. We have one set of institutions where standards are high and cater to the upper and the middle classes and the second set of institutions where standards are low and are for the large majority. This disparity obviously has its root in our existing social and economic system. It is

true that education by itself cannot change the social system. However, it can and must create a climate of opinion which would promote changes in the desirable direction. In this situation, higher education has an important role to play. Universities and colleges claim community of men who have the talent and capacity to think on their own, and thus have a responsibility to play a significant part than many others in creating a public opinion. Also, it provides training to people in various walks of life, including those who teach at the school level. That is why it would not be wrong to say that we ought to begin by changing the values, objectives and outlook at the level of higher education. As at present, we take delight in passing on the blame to someone else. University teachers blame the secondary teachers, who, in their turn, blame the primary teachers. In this state of confusion, the politicians and the educators blame each other. However, this process of passing the buck takes us nowhere.

It is the responsibility of the U. G. C., the highest agency in the field of higher education for policy formulation, to provide means for exchange of ideas and for disseminating them. It has done some thinking in the matter and has already submitted a note to the Government for development of education in the next ten years or so.

Today universities are being asked to discharge responsibilities that were not within their ambit of operation earlier. To cite only two, training people for various middle-level professions and educating the adults. He said he was glad that the S.N.D.T. Women's University had set up a women's polytechnic so that it can train women for joining various middle-level occupations. The universities are also being asked to play a progressively larger role in the training of adults - that is—those who may not have had the benefit of formal college education or have dropped out due to various reasons, or who want to add to their professional competence. The concept

of adult and continuing education in our country is still new. So far, these programmes have been started in only a few universities. Generally they are confined to catering to the needs of the upper and the middle classes. If adult and continuing education has to become a mass-movement universities will have to find ways and means of drawing in their programmes other sections, especially teachers, housewives, workers and disadvantaged groups such as slum dwellers etc. In these programmes, obviously the needs of the 80% of our rural population must be kept in mind. For the purpose, a linkage between programmes of adult and continuing education and the National Service Scheme might be necessary. These are concepts which need a great deal of study and research before they can be put in practice.

There is a paucity of systematic study in our country as to how public opinion is formulated and given expression. Public opinion to a greater extent, takes its colour from the opinion expressed by women. For one, women are more vocal than men in giving expression to their views. Also it is well-known that while man proposes, it is the woman who disposes. Men may act as revolutionaries or starry-eyed idealists but when it comes to brass tacks, it is the 'little woman' who makes the decision. In building public opinion on social evils, women can play a significant part. Unfortunately sometimes women are the loudest in supporting outmoded attitudes and values which have the effect of denying women, in fact, the equality they have been assured by law. Thus, all too often the educated woman who does not give into the family pressure of conformity, or does not look upon her husband as a God, is given a poor character in our books, novels, films and plays. It is upto the universities to create a wind for a change and bring about creation of attitudes fitting a society on equality of sexes.

Even in a limited sphere such as education, where public opinion insistently demands radical

change, when it comes to implementing reforms, somehow conservative ideas come to the surface. This has happened in such spheres as reform of the existing system of examination, more flexibility in courses through the semester system and restructuring of courses. How can this situation be changed? No easy or quick solutions

can be prescribed. However, it would be desirable if some universities were to undertake a serious study of the reasons for this phenomenon and examine whether it is the structure of the universities or innate conservatism or certain sociological factors which are responsible for this duality of attitude.

Social Education Day

(From our special correspondent)

An All-India Social Education day was observed in Calcutta on 1st November, 1977. Dr. P.C. Chunder, Union Education Minister, while inaugurating the conference, said that the drive for literacy should take the form of a national movement. Under the new education plan, priorities will be given with special stress on primary, adult and non-formal education as a means of eradicating illiteracy from the very roots of our society. He advised the States to set up Boards of Adult Education at the State level as well as the district level in line with the National Board for Adult Education at the Centre to tackle the problem. He said that out of a total number within the age group of 15 to 45, twenty-three crores were illiterate. Referring to the drop-outs he said that about 40% of children remained in school after the sixth class. This situation is atrocious and should be remedied at all costs at the earliest.

Dr. Chunder emphasised the need for a definite motivation in spreading education. One had to lay stress on education at par with profession. He advocated a policy of career-wise study. The farmer should be made to feel that the particular education that he is being given will help him in his profession. Correspondingly the farmer should feel the need for such an education and this form of education will go hand in hand with agrarian reforms. Dr. Chunder expressed the hope that the education would be kept

out of the reach of politics and positive approach would help us to out-wit the problems which were very well worked out but could not be implemented. He said that the Planning Commission had decided to allot Rs. 180 crores for education which were ten times higher than the previous allotment.

Prof. Sambhu Ghosh, Minister for Higher Education, West Bengal, in his presidential address laid emphasis on reducing the drop-outs and eradication of illiteracy. He pleaded for establishment of libraries in villages which could help maintain the continued interest in education and fulfil the other reforms of the educational needs.

Mr. Partha Dey, Minister for Primary Education, West Bengal, referred to the mass education as a remedy for mass illiteracy. He wanted to introduce basic compulsory education for the study of science and arts to make the people aware of their existence. He was for a system which will arouse consciousness and understanding of life which would ultimately help them to solve problems in a natural way.

Dr. P.C. Chunder also made an announcement that Rs. two crores has been sanctioned for Calcutta University for increasing inter-institutional facilities like construction of lecture halls and hostels in the metropolitan area. The university would also receive another sum of Rs. one crore for its campus at Salt Lake.

Meerut Seminar on Physical Education and Sports

The Meerut University organised a seminar on Physical Education and Sports recently. The seminar was inaugurated by Prof. Satish Chandra, Chairman, University Grants Commission. He emphasised the need for mass participation in games and sports at the university and college levels and felt that participation in sports should commence even from early stages of childhood. He wanted specialised sports institutes to grow where studies and sports could go together. He pointed out the role of incentive and awards in the field of sports and considered sports as service to the community.

Prof. B.S. Mathur, Vice-Chancellor, Meerut University, in

gave the valedictory address. She spoke about the role of the professionals in the field of Physical Education and assured her cooperation in providing all support for development of physical education and sport activities in the State of Uttar Pradesh.

Shri G.P. Gautam, Sports Officer, Meerut University, thanked the participants which included delegates from the State Universities and colleges and the office bearers of various sports organisations.

The following recommendations were made at the seminar:

1. The expenditure incurred on the maintenance of play fields, equipments, salaries of peons, clerks should be

par with other subject teachers.

5. Those who are working in the field of Physical Education in the Universities and Colleges must be designated as Lecturers in Physical Education instead of Physical Director / Instructor / Sports Officer / Supdt. of Physical Education, etc.

6. (a) The status of Physical Education Teachers should be at par with other subject teachers in terms of service conditions.

- (b) Lecturers of Physical Education be given representation in all the decision making bodies of the University / College.

7. Physical Education should be introduced as one of the subjects at the Degree and Postgraduate level. In each training institution (B.Ed./M.Ed.) there must be minimum of one lecturer in Physical Education teaching Physical Education as a optional paper.

8. The recommendation of the U.P. University Vice-Chancellor's Conference held in December 76 regarding the upgrading of present Diploma Courses to Bachelor's Course in Physical Education in some of the Universities be implemented and efforts should be made to start Postgraduate Courses in Physical Education in Uttar Pradesh Universities.

9. Incentives to student as well as to teachers in Physical Education should be given as follows:

- (a) 5% marks weightage may be given at the time of admission to those who have represented Region/State/University, besides 5% weightage for admission in hostels.

- (b) Attendance relaxation for the actual days of absence on account of participation may be

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his presidential address suggested that there should be a full-fledged Department of Physical Education at par with any other education department headed by a Professor of Physical Education. He urged the Central and State Government and the University Grants Commission to provide the ample financial assistance for the development of sports activities in universities.

A number of papers were presented at the seminar. Focus of discussion centered around Psychology of Sports, Role of the Association of Indian Universities, in the development of sports, Physical Education and Sports in Universities and Colleges, Physical Education as Teaching subject at degree levels and B.Ed./M.Ed. courses and Role of incentives and awards in Physical Education. Smt. Malti Sharma, Deputy Education Minister of Uttar Pradesh

brought under as legitimate expenses for purpose of Grant-in-Aid purposes.

2. Leave for Higher Education for the Teachers in Physical Education should be given on the same terms and conditions as done in the case of other teachers as approved by UGC.

3. Lecturers be appointed for Teaching Physical Education activities and the teacher-pupil ratio which is at present 1 to 1000 needs revision and should be converted to 1 to 500 with the condition that at least one teacher at Degree level be appointed where the strength does not exceed 500 students.

4. Pay scale of Physical Education Teachers should be at

given to the students who are participating in Inter Varsity/State/National/International and all sports coaching camp.

- (c) Freeship should be awarded to the students who have represented State/University/Nation.
 - (d) Some financial assistance in terms of scholarship may be given by the University/College to those who are outstanding in sports.
 - (e) A 1:5 ratio of seats may be reserved for outstanding sportsmen at the time of service and appointments.
 - (f) All those who have participated in All India School games/Mini-national/National should be given direct admissions in Medical and Engineering Courses provided that they have secured 50% marks in their qualifying examinations.
10. Professional teachers in Physical Education should be given leave with pay and other benefits for enhancing their qualifications as well as for research work in their discipline as in the case of other disciplines under teacher fellowship scheme of U.G.C.
 11. Committee be formed comprising Physical Education Teachers to draft the minimum programme as proposed under resolution mentioned above.
 12. Minimum programme be classified under four or five groups as per facilities existing in the College/University.
 13. Instructional staff be provided for running the programme according to the groups.
A sample grouping of activities in Physical Education may be as under:
 - (i) Yoga-Asans and other related activities.
 - (ii) Gymnastic and other related activities.

- (iii) Games and Sports.
- (iv) Track & Field events.
- (v) Aquatics and other related activities (where facilities exists).

14. Lecturers be appointed for teaching Physical Education activities according to the groups proposed above.
15. A faculty of Physical Education be formed on lines that of other branches of sciences.
16. A Physical Education Committee consisting of the following be formed in each College/University for the proper functioning of the mass programme of Physical Education.

Chairman:

Vice-Chancellor/Principal.

Secretary:

Senior Lecturer in Physical Education.

Members:

- (i) All Lecturers of Physical Education in case of Residential Universities/Colleges. In case of affiliating Universities all Physical Education Teachers.
 - (ii) Five Senior Players Representatives of different groups.
17. Implementation of scheme of N.S.S. in College/Varsity may be worked out by the Department of Physical Education.
 18. The Universities/Colleges must have sufficient playgrounds in terms of Deshmukh Committee recommendations. It should be made a pre-condition for granting affiliation in case of new colleges.

Proposed animal genetic research centre

Dr. M.S. Swaminathan, Director-General, Indian Council of Agricultural Research, inaugurated the two-day symposium organised by the Indian Dairy Association at the National Dairy Research Institute, Karnal. He said that the Council had appointed various committees to work out the details for implementing the recommendations of the National Commission on Agriculture. Some of the recommendations

may be implemented from April next if the Government approves them. One of the recommendations related to the setting up of a animal genetic research centre which will be used for collecting, maintaining and preserving the native breeds of animals. Dr. Swaminathan said that there was also a proposal to set up a goat research institute to develop the country's goat population. A farm near Doon, known as the National Goat Research Centre, has already been set up. He said that though India was the custodian of the largest buffalo population in the country yet buffalo research had not received sufficient attention. He said that the East Asian countries were going in a big way to undertake buffalo improvement programmes. He desired that a buffalo research institute should also be set up in India.

Dr. Swaminathan wanted that research on an animal nutrition programme, both on modern and traditional methods should be intensified and urged the scientists to work out what types of nutrition programmes should be taken up to help cattle in the cyclone hit areas.

A task force of scientists could evolve a strategy for combating such distress to crops and cattle in the cyclone prone coastal areas and the arid zones in the country. He felt that farmers in these areas were hesitant to invest more in agriculture because of the risk involved. Dr. Krishna Rao, Vice-Chancellor of Andhra Pradesh Agricultural University has agreed to undertake to develop a scientific approach to the whole problem.

Dr. Swaminathan regretted that women in India have been neglected in the extension, training programmes and called for the setting up of mobile training teams to train women in their homes.

PM proposes 8+4 system of education

Dr. P.C. Chunder, Union Education Minister, addressed the conference of Vice-Chancellors of six universities of West Bengal in Calcutta. Dr. Chunder said

that he wanted to change the priorities in educational system by allocating more funds for primary and adult education sectors. The Government was considering a report to be sent to the State Governments recommending teaching by college students as a part of curriculum. The idea was to involve the students in adult literacy programme. In the next five years some 10 crores of people in the age group of 10 to 35 would be covered by the adult education programme. For this, involvement of State Governments was necessary. He had therefore asked the State Governments to set up Adult Education Board at the State and district levels.

The Government was also considering a report suggesting the reduction of book loads and subject loads on students. It had been suggested in the report that subject load should be reduced by about half and socially useful work be included as a subject to involve students in such work. He informed that the Prime Minister had suggested the replacement of the present 10+2 by 8+4 system of education which was being considered.

The Education Minister praised the Government of Kerala for its emphasis on education as reflected by the expenditure of 40 to 46 per cent of the State revenues on education. As against this, most other State Governments including West Bengal spent only about 20 to 22 per cent. It is also more regrettable because the Central funds for education are not fully utilised by several States.

Mr Jyoti Basu, the Chief Minister of West Bengal, expressed a desire to review the entire education policy. He said that it was no use accusing students only for mass copying since he felt that the educationists were also responsible for this state of affairs.

Asian centre for science education

Prof. S. Bhagavantam, President, Committee on Science and Technology in Developing Countries (COSTED) while addressing the

Asian Regional Workshop on Physics Education at Madras announced the establishment of Asian Regional Centre for Science Education by COSTED with financial support from several international agencies. He said that one of the major activities of the COSTED was towards the development of science education at various levels. Special methods for this purpose were required for educating people in the field of science since 80 per cent were illiterate. Only audio-visual methods could be effective in this situation as they would have proper impact on large masses of people. Educators with set views had to change their outlook in order to help in this process.

Prof. Bhagvantam also said that COSTED would act as a catalyst in accelerating the process of rethinking and re-orientation in the field of science teaching. He was glad that the Indian Institute of Technology was extending all facilities and expertise to this venture.

Dr. V. G. Podoinitsin, Director, UNESCO, inaugurated the workshop. He emphasised the role of the Unesco in organising regional and international conferences and seminars for discussing new approaches to the teaching of basic sciences. He said that the Unesco had given aid under the U.N. Development Programme for the establishment of centres for advanced study in several departments of various universities. Similarly, the Unesco had assisted the NCERT with a team of science teaching experts in the improvement of curriculum, production of scientific textbooks and teacher guides. Dr. Podoinitsin said that the Unesco was interested in building up all indigenous scientific and technological infrastructure in developing countries.

Prof. B. Ramachandra Rao, Vice-Chairman, University Grants Commission, expressed the hope that the Extension Education Unit proposed to be established would be a non-profit organisation and would collaborate with the University Leadership Project of the Commission without duplicat-

ion of efforts. Prof. R.G. Narayanamurthy, Director of the IIT, Madras, said that it was good that the Extension Education Unit would become self-sufficient in a period of three years.

The seven-day workshop was attended by more than 75 delegates who came from various universities in India and other Asian countries like Malaysia, Singapore, Sri Lanka, Bangla Desh, Nepal and Thailand.

Ideas of History

Prof. Nurul Hasan, former Union Education Minister inaugurated a three-day seminar on the ideas of history, sponsored by the Indian Council for Historical Research at the University of Bihar, Muzaffarpur. Prof. Hasan said that the ideas accelerate social and material change. The material interests had also shaped the formation of ideas in society. Referring to the social conditions in different stages of history, he said that casteism played a minor role on the eve of last two general elections in the country. But it was more so in Bihar. He said that the remnants of zamindari system are still existing in Bihar. The evasion of tax payment and the practice of pairvis had existed since the time of Akbar's regime.

Prof. Bipin Chandra of Jawaharlal Nehru University, presided over the conference. Prof. Grover of the ICHR in his report referred to the achievements of the Council in the field of historical research. Dr. Sitaram Singh briefly outlined the contributions made by the University of Bihar in the development of historical studies in the State of Bihar.

No imposition of UGC scales

While talking to a delegation of the All-India Federation of University and College Teachers Organisation, the Prime Minister Mr. Morarji Desai said in New Delhi that he would not force any State Government to grant to college and university teachers the pay scales recommended by the University Grants Commission. He was against making any in-

roads into the powers of the State Governments.

The Prime Minister wanted the teachers to work much more than what they were doing at present. He wanted the long vacations to be curtailed and wanted them to play an important role in the development of the country. The entire education system requires to be changed. He said that he was holding discussions and consultations about the various problems that have arisen due to the introduction of the 10+2+3 system.

Part-time classes for dropouts

Delhi Administration is taking steps to make 125,000 people literate in 1978-79 and for this purpose 1000 adult literacy centres are to be opened. The project will cost the Administration about Rs. 35 lakhs. This announcement was made by Shri Kidarnath Sahni, Chief Executive Councillor of Delhi. He said that the administration of adult education will be strengthened with an additional Director of Education who will be assisted by two Assistant Directors and sufficient supervisory staff. A well-equipped mobile library would be commissioned which will go to various parts of Delhi.

A survey has been conducted by the Directorate to identify pockets of illiteracy in Delhi so that efforts could be concentrated in these areas. In the meanwhile the Directorate of Education has proposed to open part-time classes both for boys and girls in areas where the rate of drop-outs is high. According to Mr. Sahni the rate of drop-outs in Delhi schools is between 30 and 36 per cent.

Trends in ISM enrolments

A study of the state-wise origin of the students admitted to the first year course of the Indian School of Mines over the past five years shows interesting results. The analysis has shown that an average of 36 per cent of the students come from the State of Bihar. The figure was 39 per cent in 1974, 38 per cent in 1975 and

as high as 51 per cent in 1977. The analysis also indicates that an average of 38 per cent of the students come from the State of West Bengal, the figure being 44 per cent in 1975, 54 per cent in 1976 but a rather low 19 per cent in 1977. About 7 per cent of the students come from the North-Eastern part of the country like Assam and 6 per cent from the Uttar Pradesh. Overall, about 85.5 per cent of the students hail from Eastern India, only 9.5 per cent from the North-Western India and only 5 per cent from the Southern States, including Maharashtra and Madhya Pradesh.

Better students from outside the eastern region do not come to ISM perhaps because of equally good facilities for higher education nearer their homes. Also the situation in Institutes of Technology is similar with the nationalisation of the major sector of the mining industry, the emoluments of the senior officials have gone down considerably; and this too perhaps has had an effect on the number of good students from outside the eastern states coming to the School.

Borlaug Award

The Borlaug Award for 1977 has been shared by Dr. J.S. Kanwar, Soil Scientist and Associate Director at the International Crop Research Institute for semi-arid tropics, Hyderabad and Dr. G.S. Khush, Rice Breeder and Head of the Plant Breeding Department at the International Rice Research Institute, Philippines.

The award carries a cash prize of Rs. 10,000 and a gold medal. It was instituted by the Coromandel Fertilizer Limited in honour of the Nobel Laureate, Dr. Norman Borlaug as part of the firm's educational effort to encourage and recognise Indian scientists for outstanding research and service to agriculture. A panel of eminent agricultural scientists select these awards every year.

Dr. J.S. Kanwar has distinguished himself in the study of soils. His long involvement in the field of soils has led to notable contribution to soil chemistry and soil

fertility which has provided the base for practical programmes of soil management of fundamental importance to agriculture. His works in the area of reclamation of saline-alkali soils and dry farming is considered notable. Dr. Kanwar had been the Deputy Director-General in the Indian Council of Agricultural Research.

Dr. G.S. Khush is noted for his work in rice breeding. He pursued postgraduate studies in genetics at the University of California, USA, where he obtained the Ph. D. degree. His work as research scientist at the University of California for seven years, particularly on the cytogenetics of tomatoes is considered significant. As a plantbreeder in the field of rice, Dr. Khush acquired a pre-eminent place. He heads the Plant Breeding Department at the IRRI in the Philippines. Ten high-yielding varieties of rice developed under Dr. Khush's leadership are now planted over an estimated 12 million hectares all over the world. These varieties, in addition to their high yielding potential, are resistant to at least five major insects particularly the dreaded brown plant hopper. Dr. Khush has done remarkable work in the field of genetics, identifying genes for resistance in rice and has incorporated them in the highyielding varieties. He has the distinction of being invited by the People's Republic of China to observe the rice research and production systems in that country.

Instrumentation centre for Kashmir

The University Grants Commission has sanctioned Rs. 1.80 lakhs for the establishment of Service and Instrumentation Centre at the Kashmir University. The centre would repair and service instruments of the various departments of the university. It will also design and fabricate attachments for the existing equipments and also suggest suitable modifications. The training course for scientists and technicians in the use of different instruments would also be undertaken. The centre also seeks to provide analytical services and

will carry out research and development programmes.

UNESCO Award

Mrs. Kamaladevi Chattopadhyay, prominent freedom fighter and social worker, has been named for the 1977 national UNESCO award for rendering distinguished services to the cause of promotion of Unesco activities in India. She was one of the founders of the All-India Women Conference and was closely associated in the national struggle.

ISM golden jubilee lecture

Shri Ranchor Prasad, former Chairman of the Indian School of Mines, Dhanbad delivered the golden jubilee lecture this year. His theme was: 'Some Thoughts on Mineral Development Policy'. He dwelt on the several problems relating to mineral development such as difficulties of formulating and implementing an appropriate mineral development policy, the damage wrought by misinformed criticism, securing adequate financial inputs, pricing policy with regard to the mineral products, provision of adequate royalty to the State Sector for mineral development of the State and deployment of appropriate technology and manpower. He also advocated the export of processed or semi processed products in preference to raw material as a means of optimising the export effort.

Shri Prasad discussed the constraints in the matter of exploitation of mineral resources, including lack of adequate exploration data and stressed the need for long-term planning to optimise the resource position of the country.

The lecture was attended by ISM faculty and students and several executives of the BCCL. They took keen interest in the discussion of an issue of vital relevance to national economy covering the whole gambit of development of mineral resources.

Development of Kashmiri

A two-day research seminar on the development of Kashmiri as the regional language of the State of Jammu and Kashmir was held

at the University of Kashmir at Srinagar. Delegates from all Kashmiri-speaking areas of state participated. Prof. J.L. Koul presided over the inaugural function. He appreciated the efforts put in by the Department of Kashmiri towards the development of the language. He said that the department will be offering postgraduate courses in Kashmiri language from 1978.

ICAR awards for farm scientists

The Indian Council of Agricultural Research (ICAR) has selected seven scientists for the Jawaharlal Nehru Award for their outstanding post-graduate research in agriculture and animal sciences for 1977.

The scientists are: Dr. Ram Niwas (Agronomy), Dr. Mruthyunjaya (Agricultural Economics), Dr. D. R. C. Bakhetia (Agricultural Entomology), Dr. Vijay Pal Sing (Plan Breeding and Genetics), Dr. Nawab Ali and Dr. Sewa Ram Verma (jointly—Agricultural Engineering) and Dr. V. K. Srivastava (Animal Sciences).

The award given annually, carried a cash prize of Rs. 5,000 each.

Dr. Yash Pal Abrol (Plan Physiology) and Mr. S. H. Patil (Plant Breeding) will jointly share the Dr. R. D. Asana Endowment Prize of Rs. 2,000 for the triennium 1974-77.

Dr. Kalayya Krishnamurthy, head of the department of University of Agricultural Sciences, Bangalore will be given the Dr. P. B. Sarkar Endowment Prize of Rs. 5,000 for the triennium 1974-77 for his outstanding contributions to Agronomy.

Four agricultural scientists have been nominated for Dr. Rajendra Prasad Puraskar for 1976 and 1977 for their standard works in agriculture and animal sciences written in Hindi.

The first prize for 1976 will be awarded to Mr. Ram Prakash Saxena, assistant professor, department of agricultural engineering in the Govind Vallabh Pant University of Agriculture

and Technology, Pantnagar for his book "Beej Sansodhan". Dr. Shiv Darshan Rai, project co-ordinator, All-India Co-ordinated Project on Forage Production will be given the first prize for 1977 for his book "Chara Utpadan Avam Parikashan".

The second prize for 1976 will be given to Dr. Binda Prasad Khare, associate professor in the department of agricultural entomology at the Govind Vallabh Pant University of Agriculture and Technology, Pantnagar, for his book "Khadyanna Bhandar Avam Hanikarak Jeeva Niyantran". The second prize for 1977 will be given to Dr. Vishnu Mohan Bhan, assistant professor in the department of agronomy, Govind Vallabh Pant University of Agriculture and Technology, Pantnagar, for his book "Kharpatwar Niyantran".

Dr. Rajendra Prasad Puraskar was instituted by the ICAR for original writings in Hindi.

The first prize carries a cash award of Rs. 5,000 and second prize a cash award of Rs. 2,500.

Mr. Gorakh Nath Singh and Mr. Din Dayal Dohra jointly share Kheti Puraskar for 1976-77 for their article on agriculture entitled "Uttar Pradesh Mein Bundelkhand Ki Banjar Bhumi Aur Uska Prabandh". Dr. Vishwa Nath Tripathi and Shri Asok Kumar have been selected jointly for their article in animal sciences entitled "Labhakari Dhandha Dairy Udyog" for 1976-77.

Personal

1. Shri V.R. Mehta, Vice-Chancellor, Gujarat Agricultural University, has been elected President of the Indian Agricultural Universities Association for the year 1977-78.

2. Dr. Har Swarup has been appointed Vice-Chancellor of Jiawaji University.

3. Smt. Sushila Domal has been appointed Vice-Chancellor of Garhwal University.

4. Dr. S.S. Khanna has taken over as the Acting Vice-Chancellor of Kumaon University.

A list of Doctoral Theses Accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Mehta, Rekha Devendralal. Tensor product of banach algebras and algebras of functions. Sardar Patel University.
2. Mohapatra, Prafulla Chandra. A study of absolute summability and its application to fourier series. Sambalpur University.
3. Page, S.S. Some problems in summability of infinite series. Bhopal Vishwavidyalaya.
4. Potey, Satyanarayan Rao Krishna Rao. Problems in nonlinear continuum mechanics and thermoelasticity. Marathwada University.

Statistics

1. Shah, Dhirubhai Keshawlal. Further contributions to attributes acceptance sampling plans. M.S. University of Baroda.
2. Shah, Y.K. Certain inventory models for deteriorating items. Gujarat University.

Physics

1. Deshpande, Dilip Abasaheb. Dielectric, ferroelectric and other properties of some ABO₃ compounds. Nagpur University.
2. Deshpande, Prabhakar Vaman. Luminescence of thallium-doped sodium chloride phosphors. M.S. University of Baroda.
3. Gupta, Kamlesh Kumari. Geophysical implications of total electron content over Delhi. University of Delhi.
4. Ray, Bibha. On the absorption of ultrasonic energy in pure liquids by method of steaming. University of Calcutta.
5. Trivedi, Mira Dhirajlal. Study of tellurium single crystals. M.S. University of Baroda.

Chemistry

1. Bux, Munir. Investigation on heterocycles. Awadhesh Pratap Singh University.
2. Chandra Singh, U. Study of reactions in solutions: Some novel features in the aqueous peroxodisulphate decomposition including metal ion catalysis and polymerisation. Madurai University.
3. Chavan, Manohar Baliram. Photometric determination of some transition elements. Shivaji University.
4. Gawande, Prabha Shankar. Studies in oxygen heterocycles. M.S. University of Baroda.
5. Ghosh, Dipankar. Studies on pozzolamic properties of some Indian flyashes. University of Calcutta.
6. Gurjar, Mukund Kesheo. Organic reaction mechanisms: Carbanion reactions. Nagpur University.
7. Ishwar Singh. Analytical investigations on heterocyclic azo dyes. University of Delhi.
8. Jain, Rakesh Kumar. Programmed current chronopotentiometry: A theoretical study. University of Delhi.
9. Joginder Singh. Conversion of cyclotrienol into buxus alkaloids. M.S. University of Baroda.
10. Kakar, Yoginder Kumar. Analytical aspects of dithiocarbamates. Vikram University.
11. Mittal, Ishwar Prakash. Studies on the preparation and characterisation of N-aryl substituted dithiocarbamate complexes of some metals and bis (cyclopentadienyl) Ti (IV). University of Delhi.
12. Muhamed Kasim, S. Studies on the polyphenolic natural products of some plants of South India. Madurai University.
13. Mutreja, Hukam Chand. Studies of some heterocyclic compounds. University of Delhi.
14. Patel, Rajendrabhai Dadabhai. Synthesis and characterization of thermally stable polymaleimides and polybismaleimides. Sardar Patel University.
15. Patel, Rameshbhai Manilal. Studies on synthetic resins: Thermal behaviour of hydroxybenzoic acids, formaldehyde resins. Sardar Patel University.

16. Pattanayak, Manomohan. Study of metal ions by paper electrophoresis. University of Calcutta.

17. Raina, Mohan Lal. Chemical investigation of *Datura quercifolia*, *piper peepuloides* and *piper nigrum*. University of Kashmir.

18. Rama Rao, G.A. Physico-chemical study of metal complexes: Use of 1, 2, 3, 4 cyclopentane tetracarboxylic acid as a ligand. Vikram University.

19. Sarasukutty, S. Studies on some complexes of iron (III) and manganese (III). University of Kerala.

20. Seshadri, Venkatachari. Chemical study of some Indian medicinal plants. University of Delhi.

21. Sindhu, Raghubir Singh. Polarographic studies on metal chelates of some disubstituted pyridines. University of Delhi.

22. Siva Sankara Rao, Tarigopula. Chemical study of some Indian medicinal plants. University of Saugar.

23. Turel, J.M. Potential antituberculosis compounds: 4 thiozolidinone derivatives. South Gujarat University.

Engineering & Technology

1. Abdul Mubeen. Fracture of a beam when a small fatigue crack exists ahead of a notch. I.I.T., Kanpur.
2. Ramakrishna, M. Collision induced dissociation of shock heated diatomic molecules. I.I.T., Kanpur.
3. Rao, K.C. Solution of DPS optimal control problems and TPBVP'S using finite element approximations. I.I.T., Kanpur.

BIOLOGICAL SCIENCES

Biochemistry

1. Mitra, Satyabrata Jitendranath. Studies on the biochemistry of parasitic amoeba. Nagpur University.
2. Narang, Avtar Singh. Studies on salt-soluble proteins of mungbean, *phaseolus aureus*. Punjab Agricultural University.

Botany

1. Diwanji, Banast Bhalchander. Embryological studies in the gramineae. University of Indore.
2. Purna Chandra Rao, Deverasetti. Pathological and physiological studies of fruit rot of guava, *psidium guajava* Linn caused by *phomopsis destructum* Rao, Agrawal & Saksena. University of Saugar.
3. Rawat, Madhusudan. Studies on plants remains in coal of Jatraj, Seam, Korba Coalfield, M.P., India. Bhopal Vishwavidyalaya.
4. Setia, Ramesh Chander. Morphogenetic studies in gum producing plant cells. Sardar Patel University.
5. Subha Rao, Muktinutalapati Venkata. Cytogenetic studies of B-chromosomes and desynaptic mutants in pearl millet, *pennisetum typhoides* S & H. Andhra University.
6. Tandon, Raj Krishna. Ecological investigations on *oropetium thomaeum* (Linn F.) Trin. University of Delhi.

Zoology

1. Ambica Devi. Taxonomy and ecology of parasitic protozoans of birds and an experimental study of some malarial parasites. Kakatiya University.
2. Ananad, Ashima. Reflex stimulation of aortic chemoreceptors and role of vascular factors. University of Delhi.
3. Chandrasekharan, K. Studies on the biology, pathogenicity and treatment of important nematodes of domestic ducks. Kerala Agricultural University.
4. Chawda, Dhirajlal Bhimji. Physiological studies on trematodes. Marathwada University.
5. Fernandez, Adelaide Calisto. Cellular immune response of insects to intraspecific and interordinal tissue implants. University of Kerala.
6. Handoo, Zaffar Ahmad. Soil and plant parasitic nematodes of vegetable and fruit crops of Kashmir. University of Kashmir.

(Continued on page 670)

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- Kaul, G.N. *Nongraded school in India*. Delhi, Sterling, (c1977). xii, 116p.
- Klug, Brian. *Grading game*. London, NUS Publications, 1977. 94p.
- Kobayashi, Tetsuya. *Society, schools and progress in Japan*. Oxford, Pergamon, 1976. viii, 185p.
- Laska, John A. *Planning and educational development in India*. New York, Teachers College Press, (c1968). xi, 129p.
- Mathews, J.C. and Leece, J.R. *Examination: Their use in curriculum evaluation and development*. London, Methuen Educational, 1976. 46p.
- Munro, R.G. *Innovation: Success or failure?* London, Hodder & Stoughton, (c1977). 70p.
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Integrating NS with Commerce/Management Education

(Continued from page 654)

indicate the probable areas where our youth, receiving Commerce/Management education, may be involved. Looking to the diversity in our life and considering the geographical divergences, we may add many more.

Integrating National Service with Commerce/Management Curricula

The growing awareness of the need for compulsory social service for our students at the stage of first degree studies, active consideration has been currently given to the thought of integrating NSS with higher education in the country. While agreeing with the utility and necessity of National Service, different views have been expressed on the problem:

- One school deems it fit to make National Service compulsory for at least a year as a pre-condition for the degree.
- Another view-point demands a six months' National Service as a pre-condition for the award of the degree.

In the light of Deshmukh Committee's recommendation, if National Service is prescribed as a pre-condition for entry to an institution of higher learning, it may cause dislocation. The reason being the fact the institutions after enrolling the students would require of them a certain number of hours of national service before allowing them to pursue their studies further.

However, another school deems it fit to allow a

certain number of months at a stretch (as holidays) meant for National Service. If pursued on these lines, the scheme would cause an increase in the stretch of academic sessions, ultimately needing adjustment in the dates of admissions, and applications for courses, scholarships and employment positions, both private and public. Otherwise, 'gaps' would cause a period of 'thrust-upon-unemployment.'

In view of the above mentioned difficulties, it seems proper to introduce the National Service Scheme at different stretches (for Commerce/Management students also) so that it may fit in the general network of systems and organisational pattern prevalent in the country today.

In conclusion, it may be remarked that our education must fulfil the ideals and aspirations as revealed in Article I of the Universal Declaration of Human Rights, saying: "All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood." This necessarily means that education and more so Commerce and Management education devoid of its social responsibilities is a gospel of mammon and not the free and frank development of human personality. Educational institutions including those imparting Commerce/Management, have necessarily to entail the responsibility of imparting practical knowledge too with a bias for intra-communication in a community and family of man.

CLASSIFIED ADVERTISEMENTS

UTKAL UNIVERSITY

Advertisement No. Estt. I/24219/77

Dated 9.12.77

Applications are invited in the prescribed form for the following teaching posts in the University Service on or before 10.1.1978.

Sl. No.	Department	Post	No.	Specialisation
1.	Analytical and Applied Economics	Professor	1	
2.	Philosophy	(i) Professor (ii) Lecturer	1 1 (Temporary)	
3.	Anthropology	Lecturer	1 (Temporary)	In Social Anthropology. Preference will be given to candidates who have received training in Linguistic & Psychological Anthropology or Human Ecology & Demography.
4.	Sanskrit	Lecturer	1	
5.	Zoology	Lecturer	2	One Lecturer should have specialisation in one of the following under "desirable qualifications" 1. Biostatistics 2. Environmental Biology 3. Physiology & Biochemistry 4. Dev. Biology 5. Endocrinology & Reproductive Physiology 6. Fisheries & Limnology
6.	Oriya	Lecturer	1	
7.	Sociology	Reader	1	Research Methodology and Industrial Sociology
8.	Director of Correspondence Courses	Lecturer		
		(i) Economics (ii) Pol. Science (iii) Oriya (iv) Commerce	2 2 4 1	Temporary
9.	Bhubaneswar Law College	Lecturer	3 (whole time)	
		Lecturer	2 (part time)	
10.	LL.M.	Reader	1	

Scale of Pay:

Professor : Rs. 1,500-60-1,800-100-2000-125/2 Rs. 2,500/-
Reader : Rs. 1,200-50-1,300-60-1,900/
Lecturer : Rs. 700-40-1,100-50-1,600/
Lecturer (Part time) Rs. 300/- likely to be revised (Consolidated D.A. as admissible from time to time under the rules of the University will be paid).
Age of Superannuation—60 years.

Essential Qualifications

(a) Professor

The Professor shall
(i) be a scholar of eminence,
(ii) possess a good academic record with First or High Second Class Masters' Degree in the Subject,
(iii) have a Doctorate Degree or published work of equivalent standard,

(iv) have independent published research work of high standard in addition to the published work mentioned in (iii) above,
(v) be engaged in active research and have experience of guiding research of a considerable period as evidenced by successful supervision of doctoral research,
(vi) be teacher for ten years out of which at least seven years should have been spent in regular teaching in Post-Graduate/Hons. Classes.

(b) Reader

The Reader shall have

(i) a good academic record with a First or High Second class degree in the subject,

(ii) a doctorate degree or published work of equivalent standard,
(iii) independent published research work (in addition to the published work mentioned in (ii) (above),
(iv) teaching and research experience for eight years out of which at least five years should have been spent in regular teaching in Post-Graduate/Hons. classes. Capacity to guide research shall be regarded as an additional qualification.

(c) Lecturer

The Lecturer shall have a good academic record with First or High Second class Master's Degree in the subject.

Desirable

Two years experience in teaching or/and M.Phil. or M.Litt. or Pre-Doctoral degree. Candidates with a Ph.D. in the subject will be preferred.

In case candidates without Ph.D. Degree are appointed, they shall be required to acquire the Ph. D. Degree within 5 years.

P.G. Department of Law

Reader

The Reader shall have

(i) a good academic record with a First or High Second Class Master's Degree in the subject,
(ii) doctorate or adequate research experience,
(iii) shall have 8 years teaching and/or Professional experience at the Bar, at High Court or court of a Higher Level out of which 3 years should have been in teaching.

Bhubaneswar Law College

Lecturer

(i) Law Graduate with 2nd Class LL.B. with 5 years Practice at the Bar, Or
(ii) Law Graduate with 1st Class LL.B. with 3 years practice at the Bar, Or
(iii) LL.M. (50% of marks).

Prescribed application forms and particulars of qualifications etc. can be had from the Registrar, Utkal University in person on payment of Rs. 7/- (Rupees Seven) only, or by post on receipt of a crossed Indian Postal Order for Rs.8.50 payable to the Registrar, Utkal University, Vani Vihar, Bhubaneswar-4. Money Orders are not acceptable.

Candidates in Govt. Service, if selected for the posts for which they have applied would be asked to pay pension contribution and leave salary in case they join the University service on foreign service terms and conditions.

The University reserves to itself the right to decide the number of posts to be filled.

S. K. Panda
REGISTRAR

**MARATHWADA AGRICULTURAL UNIVERSITY
PARBHANI. (MAHARASHTRA STATE)**

ADVERTISEMENT NO MAU/2/77

Application in the prescribed form are invited on or before **30/12/1977** for the following posts in the pay-scales mentioned against these posts.

Sr. No.	Name of the post	Pay scales of the posts
(1)	Dean, Faculty of Agriculture	Rs. 1600-100-2000/-
(2)	Associate Dean & Principal (Home Science)	Rs. 1100-50-1300-60-1600/-
(3)	Professor of Agril. Economics	Rs. 1100-50-1300-60-1600/-
(4)	Professor of Home Science, Food Nutrition/Textile & Clothing/Child Development and Family Relationship.	Rs. 1100-50-1300-60-1600/-
(5)	Professor of Anatomy(Vety)	Rs. 410-30-650-EB-45-1100-50-1200/-
(6)	Professor of Animal Management (Vet)	Rs. 410-30-650-EB-45-1100-50-1200/-
(7)	Professor of Animal Genetics & Breeding (Vety)	Rs. 410-30-650-EB-45-1100-50-1200/-
(8)	Associate Professor Surgery (Vet)	Rs. 700-50-1250/-
(9)	Asstt. Prof. Microbiology (Vety)	Rs. 300-20-460-EB-20-500-25-650-EB-30-830/-
(10)	Asstt. Prof. Physiology (Vety)	Rs. 300-20-460-EB-20-500-25-650-EB-30-830/-
(11)	Asstt. Prof. Animal Nutrition (Vety)	Rs. 300-20-460-EB-20-500-25-650-EB-30-830/-
(12)	Asstt. Prof. Anatomy (Vety)	Rs. 300-20-460-EB-20-500-25-650-EB-30-830/-
(13)	Asstt. Prof. Pathology (Vety)	Rs. 300-20-460-EB-20-500-25-650-EB-30-830/-
(14)	Asstt. Prof. Medicine (Vety)	Rs. 400-40-800-50-950/-
(15)	Asstt. Prof. Entomology	Rs. 400-40-800-50-950/-
(16)	Asstt. Prof, Home Science, Textile & Clothing/Home Management/Child Development and family relationship.	Rs. 400-40-800-50-950/-
(17)	Mechanical Engineer	Rs. 400-40-800-50-950/-
(18)	University Engineer	Rs. 650-1200/-
(19)	Demonstrator (Home Science)	Rs. 300-600/-
(20)	Overseer (Jr. Engineer)	Rs. 170-400/-
(21)	Veterinary Officer	Rs. 170-10-260-EB-15-380-20-500-(Veterinary graduates to start on Rs 275/-)
(22)	Junior Clerk/Section Assistant	Rs. 115-4-135-5-160-EB-5-185-6-215/-

Note: The payscale of the post at Sr. No. 5,6,7,9,10,11,12 & 13 are likely to be revised.

Age: The age limit for the post at Sr. No. 1 & 2 shall not be more than 40 years and in case of candidates belonging to SC/ST/NT/DNT/OBC shall not be more than 45 years as on 30-12-1977. For the posts at Sr. No. 3 to 21 age limit shall not be more than 30 years (35 years in case of candidates belonging to SC/ST/NT/DNT/OBC as on 30-12-1977). The age limit for the post at Sr. No. 22 shall not be less than 18 years and not more than 30 years for candidates belonging to SC/ST/NT/DNT on 30-12-1977.

To remove the backlog of reserve seats the posts at Sr. No. 22 have been reserved for SC/ST/NT/DNT only. The candidates belonging to SC/ST/NT/DNT only can apply for the post.

The age limit shall not apply to persons already in service of Central/State Government, this university or any other University/Institute recognised by

this University. Application forms and details regarding qualification etc, for the post at Sr. No. 1 to 18 can be obtained from the Comptroller at the cost of Rs. 2/- in the form of Crossed Indian Postal Orders in the name of the Comptroller, M.A.U. Parbhani and for these posts applications in the prescribed forms complete in all respect together with crossed Indian Postal Order of Rs 8/- in the name of the Comptroller, MAU., Parbhani as registration fees should reach to the Registrar, MAU., Parbhani on or before 30-12-1977.

Application forms and details regarding qualifications etc. for the post at Sr. No. 19 to 22 can be obtained from Comptroller free of cost only for unemployed candidates and should be submitted without registration fees to Registrar, MAU., Parbhani on or before 30-12-1977. Other candidates willing to apply for these posts at Sr. No. 19 to 22 will have to obtain prescribed application forms at the cost of Rs. 2/- in the form of Crossed Indian Postal Order in the name of the Comptroller, MAU., Parbhani and

should submit without registration fees to the Registrar, MAU, Parbhani on or before 30-12-1977.

Incomplete applications in any forms and those received after prescribed date will not be considered and no correspondence thereon will be entertained.

Reservation of post for SC/ST/NT/DNT/OBC is as per Maharashtra State Govt. Rules.

Request for forms must specify the name and Sr. No. of the post accompanied by self-addressed envelope at least of the size of 23 cm x 10 cm with 55 paise stamp adhered to it. Separate applications shall have to be made for separate posts.

If considered necessary by the university the candidate shall have to appear for personal interview in the university's office at Parbhani at candidate's own cost.

In the event of large number of applications being received in response to this advertisement, to avoid inconvenience to all concerned, at the discretion of the Vice-Chancellor, limited number of candidates may only be invited for interview even though others not invited for interview might be satisfying the prescribed minimum qualification.

Candidates already in service of Central/State Govt. or any other organisation and those in the service of this University should necessarily apply through proper channel forwarding an advance copy to the undersigned. The advance copy should reach on or before the aforesaid prescribed date. The applications to be received through proper channel should reach within a fortnight after the closing date.

The fact that the posts are advertised does not mean that necessarily all the posts will be filled in.

**S. T. Kachwe
REGISTRAR**

**UNIVERSITY OF BOMBAY
Western Regional Instrumentation
Centre**

Applications are invited for the post of Professor in the Western Regional Instrumentation Centre in the University in the grade of Rs. 1500-60-1800-100-2000-125/2-2500.

The post carries the benefit of University Provident Fund and Dearness Allowance and House Rent and Compensatory Local Allowances at the rates sanctioned by the Executive Council from time to time. A higher starting salary may be given to a person possessing high qualifications. Appointment will be on probation for a period of two years in the first instance, but this probationary period may be waived by the Executive Council in a special case. Other things being equal, preference will be given to a candidate from backward classes.

The requirements for the post are:

Essential Qualifications

- (a) A Doctor degree in a branch of science or technology or published work of an equally high standard; and
- (b) consistently good academic record with first or high second class (B+) Master's degree in a relevant subject or an equivalent degree of a foreign University.

The Executive Council may relax any of the qualifications prescribed in (b) above provided that the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard.

- At least ten years' experience of research in a reputed research/instrumentation laboratory.
- Evidence of published research work and experience of guiding advanced research.
- Proven ability in designing and building major instruments.
- Capacity to lead and direct R & D activities.

Desirable qualifications

- Working knowledge of some modern sophisticated instruments.
- Experience in managing and administering work of scientists and technicians.
- Interest in Science Education.

Two copies of the application in the prescribed form, which can be had from the Registrar, should be submitted so as to reach the Registrar, University of Bombay, Bombay 400 032, on or before 31st December, 1977.

Candidates called for interview will have to present themselves at their own expenses.

Canvassing direct or indirect will be a disqualification.

K. S. Kolge
OFFG. REGISTRAR

UNIVERSITY OF BOMBAY

Centre of Post-graduate Instruction and Research, Panaji, Goa

Applications are invited for the temporary post of Director in the Centre of Post-graduate Instruction and Research, Panaji, Goa, in the grade of Rs. 1500-60-1800-100-2000-125/2-2500, with special pay of Rs 300/- p.m.

The post carries the benefit of University Provident Fund and Dearness and House Rent Allowances at the rates sanctioned by the Executive Council from time to time. A higher starting salary may be given to a person possessing high qualifications. Other things being equal, preference will be given to a candidate from backward classes.

The applicant must have:

- (a) A Doctor's degree or published work of an equally high standard; and

- (b) consistently good academic record with First or High Second Class (B+) Master's degree in any one of the following subjects or an equivalent degree of a foreign University :

History, Mathematics, English, Chemistry, Philosophy, Economics, French & Portuguese, Physics, Political Science, Microbiology, Hindi, Marathi and Sociology;

- (c) considerable teaching experience to postgraduate classes and of guiding and conducting research work in any one of the subjects under (b) above.

The Executive Council may relax any of the qualifications prescribed in (b) above provided that the selection committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard.

Two copies of the application in the prescribed form, which can be had from the Registrar, should be submitted so as to reach the Registrar, University of Bombay, Bombay-400 032, on or before 31st December, 1977.

Candidates called for interview will have to present themselves at their own expense.

Canvassing direct or indirect will be a disqualification.

K.S. Kolge
OFFG. REGISTRAR

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

Advertisement No. R/29/77

Applications are invited for appointment to various academic positions in the following departments of the Indian Institute of Technology, Kharagpur (West Bengal).

Posts and Scale of Pay

- Professor: Rs. 1500-60-1800-100-2000-125/2-2500/- plus D.A. at admissible rates.
- Assistant Professor : Rs. 1200-50-1300-60-1900/- plus D.A. at admissible rates.
- Lecturer : Rs. 700-40-1100-50-1600/ plus D.A. at admissible rates.

Age

- Professor : Preferably below 50 years.
- Assistant Professor : Preferably between 30 and 45 years.
- Lecturer : Preferably between 25 and 38 years.

Qualifications

1. Professor

Essential : First class Master's Degree or second class Master's Degree with Doctorate Degree in appropriate field with a minimum of 10 years experience in teaching at post-graduate level in an Institution of university standard and research or development work. Should have specialised knowledge in one or more specified fields.

Desirable : (a) Research publications in reputed journals. (b) Experience in guiding research. (c) Ability to organise and develop laboratories in the specialised fields.

2. Assistant Professor

Essential : First class Master's Degree or second class Master's Degree with Doctorate Degree in appropriate field with a minimum of 5 years' experience in teaching and/or research in an institution of university standard. Should have specialised knowledge in one or more specified fields.

Desirable : (a) Publications in reputed journals. (b) Experience of carrying out independent research. (c) Corporate membership of a recognised professional institution.

3. Lecturer

Essential: First class Master's Degree or Second class Master's Degree with Doctorate Degree in the appropriate branch of study with specialisation in one or more specified subjects with research or industrial experience of not less than 2 years.

N.B. For faculty posts in Architecture and Regional Planning, the essential qualifications should be as under:

First class B. Arch. followed by a Post-graduate degree/2 years diploma in Architecture and/or Planning with evidence of excellence in Architectural designing and/or detailing.

- Department of Mechanical Engineering: (a) Professor (b) Assistant Professor

Field of specialisation: (a) Professor

(a) Mechanics of Solids/Machine Dynamics, (b) Fluid Mechanics/Hydraulic Machines, (c) Design Engineering, (d) Material Transportation Engineering/Vehicle Engineering, (e) Production Engineering/Foundry Engineering/Machine Tool Engineering, (f) Thermal Engineering—Steam/Nuclear Power, I.C. Engines, Gas Turbines, Refrigeration and Air conditioning, Heat Transfer, (g) Energy conversions, (h) Mechanical Systems Engineering—Measurements and Control/Fluidics (i) Control Engineering.

N.B.: In case the candidates for the post of Professor are not found suitable, the Selection Committee may consider them for the post of Assistant Professor.

(b) Assistant Professor

(a) Applied Mechanics, (b) Thermal Engineering, (c) Production Engineering (d) Design Engineering.

2. Department of Architecture and Regional Planning:

(a) Professor, (b) Assistant Professor, (c) Lecturer

Field of specialisation:

(a) Professor: Architectural Design and Architectural Construction.

(b) Assistant Professor: Architectural Design/Detailing and/or Landscape Architecture.

(c) Lecturer: Architectural Design and Architectural Construction.

3. Department of Humanities and Social Sciences: Lecturer

Field of specialisation

For the 1st post: Master's Degree in Political Science/Sociology.

For the 2nd post: Master's Degree in French or in English with a good diploma in French with ability to speak French and to comprehend scientific/technical literature in French and render it into English.

Only capable persons with uniformly good academic career, aptitude for teaching post-graduate and under-graduate classes, research and development work need apply.

Adequate provision for reservation of post of Lecturer for SC/ST candidates as per Government orders has been made. In case suitable candidates from these communities are not available, recruitment will be made from general candidates treating the post as dereserved.

Application form may be had from the Registrar on request along with an unstamped self-addressed envelope of size 23cm x 10cm. Request for application form will not be entertained after the 29th December, 1977. Application fee (non-refundable) of Rs. 7.50 (Rs. 1.87 for SC/ST candidates) payable by means of crossed Indian Postal Order be made to Indian Institute of Technology, Kharagpur at Kharagpur-2 Post Office, Distt. Midnapore (West Bengal).

The last date for submission of application to the Registrar of the Institute is the 14th January, 1978.

UTKAL UNIVERSITY

Advertisement

No. Estt. II(8AD)/23454/77

Dated 30.11.77

Applications are invited for the post of (i) Development Officer and (ii) Controller of Examinations of the Utkal University.

Five copies of the application form will be supplied to each post to the candidates from the office of the undersigned in person on payment of Rs. 5/- or by post on receipt of a crossed Indian Postal Order worth Rs 7.50 paise payable to the Finance Officer, Utkal University, Vani Vihar, Bhubaneswar-4. No money order will be entertained for the purpose. The last date for receipt of application for the post is 15.1.1978. No application will be entertained after the due date. The candidates who are in service should apply through proper channel but they should submit advance copies of their applications along with attested copies of certificates and mark-sheets etc. so as to reach this office by the date specified. The candidates in Govt. service, if selected for the post applied for, would have to pay the pension contribution and leave salary in case they want to join the University on foreign service terms and conditions.

Candidates are required to submit along with their applications attested copies of their Diplomas, Certificates

and mark-sheets of all examinations and testimonials.

Qualification and experience

- (1) At least a second class Master's Degree with 48% marks from any of the Indian Universities.
- (2) At least eight years experience in administration preferably academic administration.
- (3) For the post of Controller of Examinations preference will be given to candidates having experience in conducting examinations. None need apply who is below 35 years in age.

Scale of Pay

Rs 700-50-1250/- (The scale is likely to be revised).

A higher initial pay may be given to a candidate in case of a suitably qualified and experienced person.

S. K. Panda
REGISTRAR

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**THE MAHARAJA SAYAJIRAO
UNIVERSITY OF BARODA**

Notification No. 12

Applications in the prescribed form are invited on or before 16-1-1978 for

the following posts. Prescribed application form will be available from the undersigned along with the details of qualifications and experience on prepayment of crossed Indian Postal Order of Re 1/- only for each post.

M.S. University Office

- (1) Development Officer

(Scale: Rs. 900-45-1080-50-1180-EB-50-1280-55-1500)

M.S. University of Baroda Press

- (2) Manager

(Scale: Rs. 900-45-1080-50-1180-EB-50-1280-55-1500)

Oriental Institute

- (3) Critical Apparatus Writer

(Scale: Rs. 425-15-500-EB-15-560-20-600-EB-20-700)

The above posts carry usual allowances as per University Rules.

The application form should be accompanied by Indian Postal Order of Rs. 7.50 for each post. Candidates if called for interview will have to come at their own expense.

All things being equal preference will be given to the candidates belonging to Scheduled Castes and Scheduled Tribes.

K. A. Amin
REGISTRAR

Theses of the Month

(Continued from page 665)

7. Patil, Supada Govind. Plankton ecology of few water bodies from Nagpur. Nagpur University.

8. Ramchandran, N. Studies on the neurosecretory system and other endocrine glands of two teleosts, *pampus argenteus* (Euphr) and *parastromateus niger* (Bloch) off Saurashtra Coast. Saurashtra University.

9. Varghese, M.D. Biology of mysids. University of Kerala.

10. Verghese, T.P. Studies on muscles gonads and liver of pomfrets, *pampus argenteus* (Euphr) & *parastromateus Niger* (Bloch) off Saurashtra Coast. Saurashtra University.

Medical Sciences

1. Chandrasekaran, Philip. Biochemical changes on exposure simulated high altitude. University of Delhi.

2. Chaudhuri, Dhruba. Biochemical studies on toxemia of pregnancy. University of Calcutta.

3. Chaudhuri, Samares. Experimental studies on structural and functional changes in intestine exposed to ionizing radiation and effect of cold on such changes. University of Calcutta.

Agriculture

1. Chandramohan, J. Biometrical studies of rice, *Oryza sativa* L: Breeding value of different dwarf sources. Tamil Nadu Agricultural University.

2. Jaganathan, V. Nutritional investigations of seaweeds in chick ration. Tamil Nadu Agricultural University.

3. Mallikarjunaiah, R.R. Associative action of soil and seed fungi and nitrogen fixing bacteria. Mahatma Phule Krishi Vidyapeeth.

4. Mandal, Rames Chandra. Interaction of calcium carbonate with sodium in sodic soils and possibilities of its application in recalculation of such soils. University of Calcutta.

5. Raj Kumar. Response of barley to applied nitrogen, stored soil moisture and supplementary irrigation. Punjab Agricultural University.

6. Ramiah, S. Studies on slow-release nitrogenous fertilizers and nitrification inhibitors in rice and their residual effect. Tamil Nadu Agricultural University.

7. Shayam, Kewal Ram. Studies on persistence of some protective fungitoxics on plant foliage. Punjab Agricultural University.

UNIVERSITY OF POONA

Applications are invited for the undermentioned posts in the various Departments of the University.

1. Professors

(1) English (Language, Stylistics and Language Teaching) (One), (2) Physics (Theoretical Solid State Physics) (One).

2. Readers

(3) Marathi (Medieval Literature) (One) (4) Centre of Advanced Studies in Sanskrit (Naya) (One).

3. Lecturers

(5) Physics (Four), (6) Chemistry: Organic (Two), Inorganic (Two), Physical (Three), Bio-Physics (One), (7) Botany (Five), (8) Zoology (One), (9) Geology (Three), (10) Statistics (Four), (11) Biometry (One), (12) Experimental Psychology (One).

General Qualifications

1. Professor

Must be scholar of eminence, must have to his credit research work of independent merit, must possess fairly long experience of teaching of Post-Graduate classes and guiding advance research in the respective subjects.

2. Reader

Must possess fairly long experience of teaching of Post-Graduate classes and guiding research in the respective subjects.

3. Lecturer

Must have a Doctor's Degree or published work of an equally high standard and consistently good academic record with First or High Second Class (B+) Master's Degree in a relevant subject or an equivalent Degree of a foreign University.

Minimum Qualifications

(1 & 2) Professor and Reader

As prescribed by the University for recognition as Post-Graduate Teacher (by research).

(3) Lecturer

As prescribed by the University for recognition as Post-Graduate Teacher (by Papers).

Scales of Pay

Professor: Rs. 1500-60-1800-100-2000-125/2-2500.

Reader: Rs. 1200-50-1300-60-1900.

Lecturer: Rs. 700-40-1100-50-1600.

All posts carry usual allowances admissible under University rules in force from time to time.

Age Limit

Candidates applying for the posts of Professors should ordinarily be below the age of 50 years, those applying for the posts of Readers should ordinarily be below the age of 45 years, those applying for the posts of Lecturers should ordinarily be below the age of 35 years. However, this age limit may be relaxed in the cases of deserving candidates.

Eight copies of applications together with the eight copies of testimonials, if any, separately for each post, giving particulars in the prescribed form should be sent to the Registrar so as to reach him not later than the 7th January, 1978.

The prescribed set of application forms, together with requisite detailed information, will be supplied to the candidates, on request accompanied by (1) a self addressed envelope (23 cm x 10 cm) bearing postal stamps worth Re. 1/- for the postage, and (2) a postal order of Rs. ten drawn in the name of the Registrar, separately, for each post. This amount will also be accepted in cash in the University Office.

The applicants, in their letters, asking for set of application, must specify (i) the name and (ii) the serial number of the post, for which they want to apply.

The selected candidates will be on probation for a period of two years and will be required, on confirmation, to contribute to the University Provident Fund and to enter into an agreement of service with the University. They will also have to pass a test in elementary Marathi, at the time of confirmation, if Marathi is not their mother-tongue.

Notes

- (1) Those who are employed must submit their applications through the proper channel.
- (2) Some of the conditions may be relaxed in the case of exceptionally capable candidates.
- (3) Candidates called for interview will have to present themselves for an interview at their own expense.
- (4) Canvassing, direct or indirect, will be a disqualification.
- (5) In the case of Lecturers, other things being equal, preference will be given to candidates belonging to Scheduled Castes (including Scheduled Castes converts to Buddhism) and Scheduled Tribes.
- (6) Higher starting salary may be given to deserving candidates.

G. J. Abhyankar

No. BUTR/S0/2353/ REGISTRAR
Ganeshkhind, Poona-7

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JAMIA MILLIA ISLAMIA

Jamia Nagar, New Delhi-110025

Advt. No. 14/77-78

Applications on the prescribed form, which can be had from the Registrar's Office on any day (except Sunday and Holiday) between 9.00 a.m. to 12.00 noon or by sending a self addressed and duly stamped (25 paise) envelope of 10 x 23 cms., are invited along with the postal order of Rs. 3/- for the following posts so as to reach the Registrar by 1.00 p.m. on 31.12.1977.

Ability to teach in Urdu and Hindi is a desirable qualification for teaching posts and for non-teaching posts the functional knowledge of these languages is essential.

D.A., C.C.A. and H.R.A. will be given as per Jamia rules.

Relaxation in any of the qualifications may be made on the recommendations of the Selection Committee in exceptional cases.

1. Three Lecturers (Grade: 700-1600):

Two in Economics (Temporary likely to be made permanent) and one in Mathematics (leave vacancy).

Essential

Consistently good academic record with a first or high second class (B+) Master's Degree or an equivalent degree of a foreign University in a relevant subject/subjects.

Having regard to the need for developing interdisciplinary programme the Master's/Doctor's degree may be in relevant subject/subjects.

Desirable

(In order of preference):- A Doctor's Degree or Evidence of research work of equivalent standard in the relevant subject. (ii) Teaching experience of Degree/Post Graduate classes.

Provided that if a teacher is not a Ph.D. at the time of his/her appointment and does not qualify himself/herself for the award of a Ph.D. Degree from a recognised University in the subject which is being taught by him/her within the period of five years from the date of his/her appointment or does not give evidence of research work of equal standard within that period in the relevant subject/subjects, he/she shall not be entitled to any future increments after the expiry of the said period of five years till such time he/she fulfils the above mentioned requirements.

2. One Extension Assistant Grade: 425-640 (Temporary), Urdu Correspondence Course.

An M.A. in Urdu with a minimum of 50% marks with an adequate knowledge of Hindi.

3. One Stenographer (Grade: 425-700):

Higher Secondary with a minimum speed of 40 w.p.m. in English typing and 120 w.p.m. in Shorthand in English. Knowledge of Urdu.

Desirable

(1) Graduate with previous experience of nothing and drafting in English. (2) Knowledge of Hindi.

4. One Clerk/Typist (Grade: 260-400)

(1) Matriculate. (2) Qualifying in the prescribed test in English and typing with a minimum speed of 35 w.p.m. (3) Knowledge of Urdu.

Desirable

(1) Previous office experience. (2) Knowledge of Hindi.

5. Four Lab. Attendants (Grade: 210-270):

Matriculation or an equivalent Examination with Science subjects.

Desirable

Should have worked in a laboratory for at least six months.

Important

Incomplete applications in any form i.e. without attested copies of certificates, degrees, diplomas, mark-sheets, prescribed application fee and on plain paper will not be entertained.

Zamir Hasan

OFFG. REGISTRAR

LUCKNOW UNIVERSITY

Advertisement No. 14/1977

Applications are invited for the post of a temporary Professor of Dentistry (Oral Surgery) in the Department of Dentistry, K.G. Medical College, Lucknow in the grade of Rs. 1200-50-1500-1800.

Qualifications

B.D.S. or equivalent qualification with a good academic record and post-graduate qualifications (M.D.S. or its equivalent). Candidates must possess five years' teaching experience in the subject concerned as Reader or in an equivalent post.

Consulting practice in the speciality allowed provided it does not interfere with the official duties. The University will, however, be free to restrict or abolish consulting practice altogether at its discretion in which case the prescribed non-practising pay and non-practising allowance, will be given.

For purposes of qualifications for the above post, the degrees obtained in a subject taught in a Department which is subsequently constituted into separate department, shall be deemed to be degree in the subject concerned, for the newly constituted department.

Special training or experience in the speciality concerned shall be an additional essential qualification. Relaxation in the prescribed qualifications may be made in exceptional circumstances in accordance with the Ordinances.

Applications in the prescribed form (available on request, free of cost, from the office of the Registrar, with a self addressed envelope 23 cm. x 10 cm.) with recent testimonials, publications etc. should reach the Registrar, Lucknow University by Wednesday, December 28, 1977. Candidates who are in service should send their applications through proper channel. Application forms to outstations will be issued upto December 20, 1977.

B.N. Singh
REGISTRAR

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LUCKNOW UNIVERSITY

Advertisement No. 15/1977

Applications are invited for the following posts:-

1. One Professor of Anthropology in the grade of Rs. 1500-60-1800-100-2000-125/2-2500.

Qualifications**Essential**

1(a). A doctorate in the subject of study concerned or a published work of a high standard in that subject; and

(b). Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks) Master's degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work, is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

2. Experience of teaching post-graduate classes for not less than seven years and/or having conducted and successfully guided research work for seven years in a recognised Institution and having published work of high standard in the subject concerned.

Preferential

High Academic distinctions.

Readers in the grade of Rs. 1200-50-1300-60-1900:

2. One Reader in Anthropology
3. One Temp. Reader in Economics
4. One Reader in Archaeology in the Department of Ancient Indian History & Archaeology. (Plan Post)
5. One Reader in English
6. One Reader in Linguistics in the Department of English & Modern European Languages.
7. One Reader in Arabic (Plan Post)
8. Two Readers in Chemistry (Plan Posts)

Qualifications**Essential**

1(a) A doctorate in the subject of study concerned or a published work of a high standard in that subject; and

(b) Consistently good academic record (that is to say the overall record of all assessments throughout the academic career of a candidate) with first or high second class (that is to say, with an aggregate of more than 54% marks) Master's Degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) of clause 1.

2. Experience of teaching honours/post-graduate classes for not less than five years and published research work of high standard in the subject.

Preferential

Experience of teaching post-graduate classes and guiding research.

Lecturers in the grade of Rs. 700-40-1100-50-1600

9. One temporary Lecturer in Economics
10. One Lecturer in English
11. One temporary Lecturer in Statistics
12. One temporary Lecturer in Chemistry.

Qualifications**Essential**

(a) A doctorate in the subject of

study concerned or a published work of a very high standard in that subject; and

(b) Consistently good academic record (that is to say, the overall record of all assessments throughout the academic career of a candidate) with first class or high second class (that is to say, with an aggregate of more than 54% marks) Master's degree in the subject concerned or equivalent degree of a foreign University in such subject.

Where the Selection Committee is of the opinion that the research work of a candidate, as evidenced either by his thesis or by his published work is of a very high standard, it may relax any of the qualifications specified in sub-clause (b) supra.

Preferential

Experience of teaching degree/honours/post-graduate classes for two years.

General

For purposes of qualifications required for the above posts, the Degree obtained in a subject taught in a Department which is subsequently constituted into separate department shall be deemed to be degree in the subject concerned for the newly constituted Departments.

Benefits of Provisional Appointment as admissible under the Ordinances of the University shall be admissible for permanent appointment after one year of probation for permanent appointment. It is not necessary to have any/all of the advertised posts.

For the posts of Lecturers, other things being equal preference will be given to Scheduled Castes/Tribes candidates, who are considered fit. Such candidates should indicate in their applications that they belong to Scheduled Castes/Tribes, attaching certificate from the District Magistrate of the District to which they belong. No other certificate for this purpose will be entertained. In case of Scheduled Castes/Scheduled Tribe candidates interviewed by the Selection Committee, if suitable candidates are not available for appointment to the posts of Lecturers, the Selection Committee may recommend appointment of suitable candidate as Research Associate in the scale of Rs. 700-1300 for a period upto three years and these persons could later compete for the posts of Lecturers as and when vacancies occur.

Applications on the prescribed form (available on request, accompanied with a self-addressed envelope of size 23 cm x 10 cm, free of cost, from the office of the Registrar) with recent testimonials, publications etc. should reach the Registrar, Lucknow University, by Thursday January 2, 1978. The candidates who are in service must send their applications through proper channel. Application Forms to outstation candidates will be issued by post upto Saturday, December 24, 1977.

B.N. Singh
REGISTRAR

